



Curriculum vitae - Prof. Dr. Kiss Lorant
Profesor Clinica Chirurgie I Doctor în științe
medicale, medic primar chirurgie generală și
toracică
Medic șef al Clinicii Chirurgie 1 din ULBS SCJUS
Facultatea de Medicină

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Informații personale

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Naționalitate	Maghiară
Data nașterii	20 octombrie 1949, Odorhei, jud. Harghita
Starea civilă	Căsătorit
	Soția Kiss Ileana Dora, născută în București, absolventă UMF București, Facultatea de Stomatologie, medic specialist stomatolog
	2 copii: Kiss Roland, asistent universitar, absolvent al Facultății de medicină Sibiu, medicină generală, doctor în științe medicale - specializarea chirurgie
	Kiss Martha - studentă an VI - Facultatea de Medicină ULBS Sibiu, Stomatologie.

Educație și formare Studii gimnaziale și liceale

1955-1962	Clasele I-VII în Peștișul Mare, jud. Hunedoara, școala generală Cristur, jud. Hunedoara
1963-1967	Colegiul Național Deva, secția școală. În 1967 am absolvit cu diplomă de bacalaureat.

Studii universitare

Iulie 1967	Admis prin examen la Institutul de Medicină și Farmacie Tg. Mureș, Facultatea de Medicină Generală
1967-1973	Am urmat cursurile Facultății de Medicină Generală, având media la examenul de diplomă 10 (zece) - septembrie 1973
09.1973	Susținerea Lucrării de Diplomă și obținerea Diplomei de Doctor - Medic, nr.3515/5.10.1973
01.11.1972-01.11.1973	Student anul VI, medic intern Spitalul Clinic Tg. Mureș în specialitatea chirurgie generală
1973-1974	Mi-am satisfăcut serviciul militar la termen redus 4 luni, după terminarea facultății, la Focșani
1972-1975	Medic intern în chirurgie I.M.F. Tg. Mureș

Experiență profesională

1975	Am devenit, prin concurs național, susținut la UMF București, medic secundar în chirurgie
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	generală
1975-1978	Stagiu de specializare în chirurgie generală la UMF Cluj-Napoca, UMF București, Institutul Fundeni
1978	În sesiunea 26.09.1978 confirmat ca medic specializat în chirurgie generală Ordin MS: / 9,66
1978-1981	Medic specialist chirurgie generală Spitalul Municipal de Urgență Petroșani
1981 – sesiunea iunie	Confirmat medic primar în chirurgie generală – examen concurs național București, Ordin MS: 224/17.06.1981
1985	Confirmat medic șef secție chirurgie la Spitalul Municipal de Urgență Petroșani
1985-2000	Medic șef secție chirurgie Spitalul Municipal de Urgență Petroșani
2007-sesiunea de examen iunie București	Confirmat în a doua specialitate ca medic principal în chirurgie toracică Ordin MS: 557/26.04.2007
2012 sesiunea de examen iunie București	Confirmat medic principal chirurgie toracică Ordin MS: nr.557/26.03.2007
2003 - prezent	Medic Șef secția Clinica Chirurgie I Sibiu – SCJUS compartimente Chirurgie generală și toracică - esofagiană (TORACO – ESOFAGIANĂ)
2001- prezent	Integrare clinică în Spitalul Clinic Județean de Urgență Sibiu
1986-2000	Președinte al Comisiei Oncologice

Activitate didactică

1991-2000	Predare materia de chirurgie și chirurgie de urgență la Școala Sanitară Postliceală din cadrul Spitalului Municipal de Urgență Petroșani.
1999-2003	Conferențiar universitar ULBS Facultatea de Medicină Victor Papillian Ordin MFN nr. 3950/05.06.2001
2003 - prezent	Coordonator științific la peste 30 de lucrări de diplomă pentru absolvenții Facultății de Medicină Sibiu
Din octombrie 2006	Conducător de doctorat pentru doctoranți în stagiul de pregătire în cadrul Școlii Doctorale ULBS
2003 - în prezent	Coordonator al Cercului Științific Studențesc - - specialitatea Chirurgie - clinica Chirurgie I
2006-2013	Director al Centrului de Cercetare Experimentală și Microchirurgie – ULBS Ordin ULBS rector 649/28.06.2006
2014 - prezent	Director al Bazei de Training – Chirurgie clasică și laparoscopică de SCJUS – Clinica de chirurgie I

Activitate științifică

1999	Am devenit doctor în medicină, specialitatea chirurgie, în baza ordinului Ministerului Educației nr. 3774/10.05.2000
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Lucrări științifice

1998	Monografia: Studiul Resorbția Proteinelor marcate RISSAA MAA după gastrectomie totală la animale de experiență și la oameni. Editura: Universitas 1998
2000	Hipotermia dirijată în traumatismele cranio-cerebrale, ISBN 973-8260-19-2
2003-2004	Chirurgie Vol.I, Ed. Universitas ISBN-9738260353 Cancerul gastric, Ed. Universitas 2003

	Tehnici de chirurgie clasică pentru rezidenți litografiat ULBS 2004
	Tehnici chirurgicale în cancerul gastric, Ed. Universitas 2003
2000	Curs litografiat: Patologia chirurgicală a peretului abdominal Îndrumător de lucrări practice: Semiologie chirurgicală 2000. Coautor: urgențe medicale în Nursing :”Primele 60 de minute” resuscitarea cardiorespiratory și cerebrală. ISBN 973-8260-22-1
2000	Semiologia chirurgicală ISBN 973-8035-52, Ed. Universitas 2000
2003-2004	Resorbția proteinelor după gastrectomie totală ISBN 973-8035-53-8, Ed. Universitas 2000
2005	Chirurgie practică vol. III Ed. ULBS ISBN 973-739-014-8-2006
2012-2015	Patologie chirurgicală vol. I-II-III-IV-V ISBN general: 978-973-741-4021 Vol.I 978-973-741-403-8-2012 Vol.II 978-973-741-404-5-2013 Vol.III 978-973-741-405-2014 Vol.IV 978-973-741-406-9-2015 Vol.V 978-973-741-407-6-2015

Lucrări publicate

1980-2014

1. Stăncescu M., Medianu D., Kiss L. - Vagotomia tronculară asociată bulbantectomie în tratamentul ulcerului duodenal. Rezulate imediate și tardive, Chirurgia, București, 1981,4,84;
2. Kiss L., Nica Cr., - Despre cancerul de bont gastric, Sibiul Medical, XI, 2/2000, p.178;
3. Kiss L., Ciontoș I., Nica Cr., Fîrfa M. - Intervențiile gastrice la vârstnici, Sibiul Medical, X, 2/1999, p. 139;
4. Kiss L., Csiki M., Hirschfeld I., Merlescu L. - Studiul resorbției proteinelor marcate la șobolani albi după gastrectomie totală, Cercetări Exp.-Med. Chir. Vol.V. 1998, p.219;
5. Kiss L., Nica Cr. - Pseudoocluzia acută a colonului sau sindrom Ogilvie (PAC), Chirurgia, București, 95, 5,2000, pag. 437.;
6. Kiss L., Lepădatu E., Brândeș M., Dârlea V., Șodolescu P. - necroza de colon în pancreatita acută necrotică, Cercetări Exp.-Med. Chir., vol.III, 2-3, 1996, p.105;
7. Kiss L., Dârlea V., Brândeș M., Foarfa M. - Cancerul gastric - factori de supraviețuire, Sibiul Medical IX, 4, 1998, p.331;
8. Kiss L., Brândeș M., Balint I., Nechifor T. - Colectomia subtotală în cancerul de colon stâng ocluziv, Cercetări Exp. Med. Chir., IV, 3, 1997, p.78;
9. Kiss L., Dârlea V., Brindeu M., Șodolescu P. - Volvulusul de sigma, Cerc. Exp. Med.Chir.,

- III, 4,196-1997;
10. Kiss L., Lepădatu E., Balint I. - Indicația toracotomiei de urgență în traumatismele toracice. Observații pe marginea a 7000 de traumatisme toracice tratate în intervalul 1978 - 1995, Chirurgia, București, 92,1997, p.269;
 11. Kiss L., Balint I., Lepădatu E. - Hematomul retroperitoneal în traumatismele abdominale incluse, Chirurgia, București, X, 104, 1998, p.328;
 12. Kiss L., Brândeau M., Lepădatu E., Odol C, Sodolescu P. - Procedeul anatomic Bassini, A.M.T. 1, 3 -4, 1997, p.71;
 13. Kiss L., Foarfă M., Sodolescu P. - Dificultățile de diagnostic și reintervenții la bolnavii septici, A.M.T. vol.I, 3-4, 1997, p.137;
 14. Kiss L., Samoilă I., Balint I., Lepădatu E., David Gh. - Sindromul toxico-septic în ocluziile intestinale postoperatorii (O.P.O.P.), A.M.T., vol.I, nr.4, 1996, p.391;
 15. Kiss L., Brândeau M., Lepădatu E., Dârlea V., Nechifor T., Sodolescu P. - Fascita necrozantă și sindromul de disfuncție organică multiplă (M.O.D.S.), A.M.T., vol.I, 4, 1996, p.412;
 16. Kiss L., Brândeau M., Lepădatu E., David Gh. - Observații privind infarctul intestinal posttraumatic, A.M.T., vol.I, 2,1996, p.214;
 17. Kiss L., Brândeau M., Samoilă I., David Gh., Sodolescu P. - Pancreatita acută necrotică hemoragică în pancreatita extensivă hemoragică idiopatică, în evoluție neobișnuită în reintervenții multiple, A.M.T., vol.I, 1997, p.65;
 18. Kiss L., Lepădatu E., Brândeau M., Nechifor T., David Gh. - Tratamentul ulcerelor duodenale cronice perforate în 283 de cazuri, Cercet. Exp. Med. Chir., IV, 1997, p.49;
 19. Kiss L., Nica Cr. - Observații privind tratamentul chirurgical în traumatismele hepatice, Chirurgia, București, vol.95, nr. 4, 2000, p.335-340
 20. Kiss L., Nica Cr. - Despre forma rară a ocluziilor adultului - invaginația, Sibiul Medical nr.4/2001, p.464-466;
 21. Kiss L., Nica Cr. - Observații privind modificările drenajului limfatic gastric în patologia gastrică malignă, prin prisma limfografiei intraoperatorii, Revista Chirurgia, 2002, 4, 97, p.341-349;
 22. Kiss L., Nica Cr - Despre leziunile duodeno-pancreatice prin prisma a 42 cazuri operate, Revista Chirurgia, 2001, vol. 96, nr.5, p.23 - 25;
 23. Kiss L. - Irigația intraoperatorie a colonului în chirurgia de urgență, Revista

- Chirurgia, 2001, voi 96, nr.3, p.499-504;
24. Kiss L., Nica Cr. - Sindromul postcolecistectomie din punctul de vedere al chirurgului, Sibiul Medical, nr.3,2001, p.292 - 295;
 25. Kiss L., Nica Cr. - Despre pericolecistite, Cercetări experimentale medico-chirurgicale nr. 3-4, 2001, p. 202-207;
 26. Kiss L., Nica Cr. - Despre clinica pseudochistului pancreatic prin prisma a 50 de cazuri, Sibiul Medical, nr. 1,2002, p.62-66;
 27. Kiss L. - Rolul antibioterapiei profilactice în apendicitele inflamatorii, Sibiul Medical, nr.4,2000, p.457 - 458;
 28. Kiss L., Remescu A., Ionuț I. - Despre rupturile traumatice de diafragm prin prisma a 58 de cazuri operate - Jurnalul de chirurgie toracică București, 2004, nr. 1, voi 1, p.20-26
 29. Kiss L., Nica Cr. - Despre plăgile cardiace. - Jurnalul de chirurgie toracică București, 2004, voi. 1,nr.1,p. 16-20
 30. Kiss L., Nica Cr., Remescu A. - Despre politraumatisme prin prisma a 12.000 de cazuri tratate. - Jurnalul de chirurgie toracică București, 2004, voi. 2, nr. 1, p.9-14.
 31. Kiss L., Lepădatu E. — Necroza ischemică a micii curburi gastrice - complicație rară a vagotomiei supraselective. - Revista de Cercetări experimentale medico-chirurgicale Timișoara, 2003
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 33. Kiss L., Bărbulescu B., Bardac O., Helgiu C, Tănăsescu C. - Efectul gastrectomiei totale lărgite asupra complicațiilor postoperatorii. - Revista Sibiul Medical, 2003
 34. Kiss L., Tănăsescu C, Helgiu C, Bărbulescu B., Crețu D. - Stadiul actual al terapiei hemoragiilor din ulcerele gastro-duodenale.- Revista Sibiul Medical, 2004
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39. Kiss L., Nica C, Remescu A. - Complicație rară după vagotomia supraselectivă - Necroza ischemică a micii curburii gastrice, Revista medico-chirurgicală.
40. Kiss L., Nica Cr., Tănăsescu C, Bărbulescu B., Ilie S., Crețu D., Frățiciu A., Mităchescu A., Kiss R. - Recidivele locoregionale ale cancerelor de rect operate - Revista Sibiul Medical, voi. 15, nr. 2, 196 - 198, 2004.
41. Kiss L., Tănăsescu C, Bărbulescu B., Crețu D., Kiss R., Sârbu N., Ciontoș I. - Rezecția primară fără lavaj intraluminal în cancerele de colon stâng și rect ocluzive. - Revista Sibiul Medical, voi. 15, nr. 2, 198 - 202, 2004.
42. Kiss L., Nica C, și alții - Rolul citologiei peritoneale în prognosticul tardiv al cancerelor de colon și rect. - Chirurgia, voi. 2, 3, 174 — 179, 2004.
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44. Kiss L., Tănăsescu C, Ilie S., Sava M., Bărbulescu B., Crețu D., Kiss R., Sârbu N. - Colecistita acută: tratamentul chirurgical - Sibiul Medical, voi. 16, nr. 2, 222 - 226, 2005.
45. Kiss L., Crețu D., Ilie S., Kiss R., Sârbu N. - Dehiscentele anastomozelor după rezecții efectuate pentru cancer de rect. - Sibiul Medical, voi. 16, nr. 2, 226 – 229, 2005.
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47. Kiss L., Comaniciu S., Șanta A., Olariu T., Maniu D., Kiss R. - Abcesul splenic - Revista Sibiul Medical, voi. 16, nr. 1, 84 - 86, 2005.
48. Kiss L., Comaniciu S., Kiss R., Sârbu N., Ilie S., Maniu D., Grosu F. – Arteriopatia diabetică a membrilor inferioare - Revista Sibiul Medical, voi. 16, nr. 4, 216 - 219, 2005.
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50. Kiss L., Maniu D., Ghișe Gh., Strugaru M., Kiss R., Sârbu N. - Rolul afecțiunilor vasculare periferice asociate cu osteită în evoluția piciorului diabetic — Sibiul Medical nr. 1, 2006.
51. Kiss L., Comaniciu A.S., Kiss R., Crețu D., Maniu D., Ilie S. - Infarctul entero-

- mezenteric - Sibiul Medical nr. 1,2006.
52. Kiss L., Comaniciu A.S., Kiss R., Ilie S., Crețu D., Maniu D., Sava M., Șanta A. - Ischemia acută nechirurgicală a membrelor inferioare - Sibiul Medical nr. 2,2006.
53. Kiss L., Nica Cr., Bărbulescu B., Kiss R., Sârbu N., Ilie S., Maniu D., Dârlea V - Factorii prognostic în tratamentul cancerului gastric - studiu multicentric pe 12 ani. - Revista Chirurgia Supliment 1, 2008.
54. Kiss L., Nica Cr., Kiss R., Helgiu C, Bundache M., Ilie S., Maniu D. – Despre tratamentul hematoamelor retroperitoneale. - Revista Chirurgia Supliment 1, 2008.
55. Helgiu C, Boca L, Teodoru C, Cotârlă L., Helgiu A., Kiss L. - Complicațiile tardive ale fistulei arteriovenoase. - Revista Chirurgia Supliment 1, 2008.
56. Helgiu C, Boca I., Bardac O., Teodoru C, Cotârlă L., Helgiu A., Kiss L. – Displazia arterială la pacientul hemodializat - prezentare de caz. - Revista Chirurgia Supliment 1,2008.
57. Helgiu C, Boca I., Bardac O., Teodoru C, Cotârlă L., Helgiu A., Kiss L - Interpoziție protetică pentru menținerea abordului vascular - Revista Chirurgia Supliment 1,2008.
58. Kiss L., Totoianu L, Kiss R., Porr J., Șanta A., Mihalache C, Maniu D., Ilie S., Perişanu Șt., Sârbu N. - Rezultatele precoce ale chirurgiei extensive din gușile nodulare benigne (cel puțin lobectomie). - Revista Chirurgia Supliment 1, 2008.
- A) Romanian Journal of Angiology and vascular surgery 2009, voi 10, 1-2, 72-73 The treatment difficulty in the complex complication of diabetic foot Kiss L., Porr P., Kiss R., Stoia D., Maniu D., Barbulescu B., ISSN: 1454-4741
- B) Crohn disease complicted with stenosis and vascular digestive complications Kiss L., Porr P., Kiss r., Barbulescu B., Alexe D., Deac C, Ilie S., Romanian Journal of Angiology and vascular surgery 2009, voi 10, 1-2, 74-75
- C) Colorectal carcinom, number of lymph nodes examined Kiss R., Bartos L., Porr P., Kiss L., Alexa D., Zaharie S. Acta Medica Marisilensis 2011, voi 57, nr. 1, p.34-37
- D) Anostomatic leakage after colonie resection Kiss R., Kiss L., Alexe D., Ilie S., Acta Medica Marisilensis 2011, voi 57, nr. 1, p.38-40
- E) Sentinel node mapping in colorectal cancer Kiss R., Barbulescu b., Kiss L., Ilie S., si alții Acta Med. Transilvania 2011, voi 2, an XVI, iunie, p.76-80

- F) The number of lymph nodes harvest in colorectal cancer Kiss R., Porr P., Kiss L., Zaharia S. Acta Med. Transilvania 2011, voi 3, an XVI, sept., p.124-127
- G) Ischemia acuta nechirurgicala a membrelor inferioare . Aportul infiltrației peridurale Kiss L., Comaniciu S., Kiss R., Ilie S., Cretu D., Maniu D., Sava M., Santa A. Sibiu Medical 2006, 17,2, pag. 194-196
- H) Infarctul enteromezenteric Kiss L., Comaniciu S., Kiss R., Cretu D., Maniu D., Ilie S. Sibiu Medical 2006, 17,1, pag. 54-57
- H') Gastric cancer in patients > 75 years Kiss R. Kiss L. Porr P, Zaharia S. Acta Med. Transilvania martie 2011, an. XVI, nr. 1, p.222-224.
- H") Identificarea „Ex vivo” a NLS in cancerul de colon Moga D. Posentiu A. Moga C. Kiss R. Kiss L. Acta Med. Transilvania martie 2011, an. XVI, nr. 3, p. 127-130
- I) Rolul afecțiunilor vasculare periferice asociate cu osteite in evoluția piciorului Diabetic Kiss L., Maniu D., Ghise Gh., Kiss R., Sarbu N. Sibiu Medical 2006, 17,1, pag. 71-74
- J) Rolul chirurgiei venoase superficiale in terapia ulcerelor venoase Kiss L., Kiss R., Porr P., Ilie S., Maniu D., Stoia D. Revista Romana de flebologie, 2008, (VI-VI-1-2, 128-129)
- K) Management of acute intestinal ischemia Kiss L., Kiss R., Porr P., Ilie S., Maniu D., Dtoia D. Revista Romana de flebologie, 2008, (VI-VI-1-2,129-130)
- L) Supraviețuirea după intervențiile efectuate pentru ischemia acuta Kiss L., Kiss R., Porr P și alții Revista Romana de flebologie, 2008, (VI-VI-1-2, 130-131)
- M) Tehnica ganglionului santinela in cancerul colorectal Moga D., Popentiu A., Badiu R., Kiss L., Jurnalul de chirurgie Iași, 2010, 6 (1), pag. 74-84
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- P) Despre chimioterapia neadjuvanta in cancerul gastric local avansat Kiss L., Ilie S., Maniu D., Olaru T., Cretu D., Kiss R., Nica C, Comaniciu S. Chirurgia 2006, 101, 8 (s) pag. 22-23
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Proiecte și granturi

Între 01.01.2007 și 10.11.2009

Grant Internațional în derulare prin consorțiu. Participare: Tg. Mureș

“Metode moderne morfo - clinice, imagistice, imunologice și chirurgicale de evaluare a realizării și urmăririi postoperatorii a transplantului hepatic.” - director grant prof. dr. Copotiu Constantin, dir. Proiect prof.dr. Kiss Lorant - 2007

Cercetare de excelență Timișoara – Factorii de risc în boala varicoasă și boala trombo – embolică venoasă a membrelor – optimizare, diagnostic, profilaxie, tratament. – dir. Prof. dr. Jecu Avram

2012 - 2015

Grant internațional în derulare Denumire proiect Norgine NP7 5004-04-2011 (SDS)(NSN001)

Denumire competiție – Amulticentre - Randomised, Double Blind , Placebo, Controled Study to evaluate the Safety of TZP – 101

Director international proiect – Dr. Sandy Eisen

Participant grant Prof. Dr. Kiss Lorant ULBS Sibiu

Lucrări comunicate

1980-2014

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Kiss L., Csiky M. - Unele aspecte ale tratamentului chirurgical al bolii pilonidale- lucrare comunicată la Sesiunea cercurilor științifice studențești Tg. Mureș, fiind premiată cu

premiul II.

În intervalul 1971 - 1973 am fost coautor la 4 lucrări științifice, dintre care 3 au fost prezentate la ședința U.S.S.M. Tg. Mureș, iar una dintre ele, intitulată Studiul resorbției proteinelor marcate după gastrectomie totală , autori: Papai Z., Csiky M., Hirschfeld I., Merlescu L., med.vet. Răduț M., Kiss L., a fost comunicată la Simpozionul Internațional de Gastroenterologie, iunie 1974, Cluj-Napoca.

În perioada stagiului de secundariat la Clinica Chirurgie Fundeni am fost cooptat în efectuarea unui studiu clinic și radiologic la bolnavii operați pentru ulcer duodenal, sub conducerea Prof.Dr. Stăncescu M., fiind coautor la lucrarea: Stăncescu M., Medianu D., Kiss L. - Vagotomia tronculară asociată bulbantrectomiei în tratamentul ulcerului duodenal. Rezultate imediate și tardive. Lucrarea a fost emunicată la U.S.S.M. Buzău-București 1981.

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Hemotoracele acut Kiss L, Kiss R.. - Chirurgia Supliment, ISSN 1221-9118, mai 2012

Lucrări comunicate în Conferința Internațională a VII -a Piatra Neamț 3-6.10.2013

- a) Indicațiile toracotomiei de urgență în leziunile toracice. Kiss L., Kiss R., Ardeleanu B., Ereemeev S., Ștefan V., Vaida O., Sava M..
- b) Despre tratamentul HRP posttraumatice Kiss L., Kiss R., Vaida O., Lodromanean D., Bereanu A., Ereemeev S..

Lucrări publicate în rezumatul Congresului Roman de Flebologie cu participare internațională 17 - 19.10.2013 – Timișoara

Piciorul diabetic complicat vascular Kiss L., Kiss R., Ștefan V., Gruian D., Ardelean B..

Complicație vasculară rară a bolii Crohn Kiss L., Kiss R., Deac C., Rasdeaconu I., Ștefan V., Ereemeev S., Vaida O., Ardelean B., Lodromanean D..

Moderator de sesiune la Congresul Roman de Flebologie Timișoara 17-19.10.2013

Moderator de sesiune la Conferința Internațională de Chirurgie Piatra Neamț 3-6.10.2013

Lucrări prezentate și publicate în volumele conferințelor organizate în străinătate/în țară 2013

Thoracotomy in thoracic injury Kiss L, Kiss R., Ardeleanu B., Ereemeev S., Ștefan V., Vaida O., Sava M - Caiet de rezumate-Congres Național cu participare internațională a Zilelor Medicale Sibieni, pag. 34-35, ISSN 2344 259X, nov. 2013

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Locul tratamentului chirurgical in limfoamele gastrice Kiss L., Kiss R., Bundache M., Zaharia S. Crăciun R - Conferința Naționala de Chirurgie, ISSN 1221-9118, pag. S74-S75, mai 2013.

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Locul tratamentului chirurgical in limfoamele gastrice Kiss L, Kiss R., Bundache M., Zaharia S., Crăciun R. - Chirurgia număr special, voi 108 supliment, ISSN 1221-9118, pag. S74-S75

Boala Crohn- complicata - prezentare de caz cu complicațiile rare Kiss L, Kiss R., Deac C, Rasdaconu I., Ștefan V.- Chirurgie număr spaecial voi 108 supliment ISSN 1221-9118, pag. S82-S83, mai 2013.

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Cărți științifice (de autor / editate / traduse) publicate la edituri naționale 2013

Patologie chirurgicală, voi III Editura Universitas, număr de pagini 450, ISBN, 978-973741-405, 2013

Patologie chirurgicală voi II Editura Universitas, număr de pagini 400, ISBN, 978-973741-405, 2013

Citări în bazele de date recunoscute de comisia CNATDCU aferenta domeniului

Pathological evidence in support of total mesorectal excision in the management of rectal cancer

Kiss L, Kiss R., Porr PJ., Nica C, Bardac O., Tanasescu C, Barbulescu B., Bundache M., Ilie S., Maniu D., Zaharia S., Hulpus R

Aplicații la competiții de cercetare internaționale (Programe ale UE, alte competiții internaționale)

Denumire proiect - Norgine NP7 5004-04-2011(SDS)(NSN001)

Denumire competiție - Amulticentre - Randomised, Double - Blind, Placebo - Controlled Study to evaluate the Safety of TZP-101

Director proiect - Dr. Sandy Eisen - în derulare 2012 - 2015

Cărți Științifice 2014

Patologie chirurgicală voi IV

Kiss Lorant- Editura Universitas, ISBN 978-973741-406, 2014

Patologie chirurgicală voi V

Kiss Lorant - Editura Universitas, ISBN 978-973741-406, 2014

Lucrări Prezentate și Publicate în 2014

- 1 .Pancreatita acuta- când este indicata intervenția chirurgicala de urgenta Kiss L, Kiss R-Zilele Medicale Sibiene 13-14- nov 2014
- 2.Modificarea drenajului limfatic gastric in patologia gastrica maligna prin prisma limfografiei invivo Kiss L, Kiss R, P.J Porr- Zilele Medicale Sibiene 13-14- nov 2014
- 3.Videotoracosopia in terapia complicațiilor tumorale toracice Kiss L Kiss R- Zilele Medicale Sibiene 13-14- nov 2014
- 4.Severitatea pacientului prezentând politrauma, Kiss L Kiss R- Zilele Medicale Sibiene 13-14- nov 2014
- 5.Fistule anastomotice simptomatice din rezecțiile efectuate pentru cancerle de rect Kiss L Kiss R- Zilele Medicale Sibiene 13-14- nov 2014
- 6.Rezecția primara fara lavaj intraluminal in cancerle ocluzive de colon stâng si rect Kiss L Kiss R- Zilele Medicale Sibiene 13-14- nov 2014
- 7.Stările seprice din piciorul diabetic complicat Kiss L Kiss R- Zilele Medicale Sibiene 13-14- nov 2014
- 8.Tratamentul fistulelor recidivate in chirurgia tractului alimentar Kiss L Kiss R- Realizări deosebite in Chirurgie, Simpozion Clinica Chirurgie I, Tg. Mureș, 12.12.2014
- 9.Travail Original: L'anorectomie anterieure avec la section du sphincter de l'anus en tumeurs du rectum Kiss L Kiss R - Trisieme course intensif franco-roumain d'oncologie digestive 14-15 nov 2014
- 10.Supraviețuirea după intervenții efectuate pentru cancer colorectal Kiss L, Nica C, Kiss R. Conferința Chirurgilor Moldova 24-26 oct 2014
- 11 .Efectele lărgirii gastrectomiei totale asupra complicațiilor postoperatorii Kiss L, Nica C, Kiss R. - Conferința Chirurgilor din Moldova 24-26 oct 2014
- 12.Despre chimioterapia neadjuvanta in cancerul gastric avansat Kiss L, Porr PJ, Kiss R.. – Conferința Chirurgilor din Moldova 24-26 oct 2014
- 13.Asocierea infecției vasculare in osteita diabetica Kiss L, Bereanu A., Vaida O., Kiss R. - Revista Romana de Flebologie 2014 www.srflebologir.ro
- 14.Embolia pulmonara si tromboza venoasa profunda in trauma Kiss L, Bartos I., Kiss R. - Revista Romana de Flebologie 2014 www.srflebologir.ro
- 15.Complicatia rara a bolii Crohn Kiss L, Kiss R., deac C, Rasdeaconu I., Ereemeev S., Vaida O., ArdeleanB. - Revista Romana de Flebologie 2014 www.srflebologir.ro
- 16.Piciorul diabetic complicat Kiss I., Kiss R., Ștefan V., Ereemeev S., Gruion I. - Revista

17. Coleratia dintre presiunea intraabdominala si aspecte CT in pancreatita acuta severa Bereanu A., Sava M., Kovacs C, Kiss R., Rotaru M., Kiss L. - Acta Medica Transilvanica, voi. II, nr. 102, **BDI**, pag. 126-129, ISSN 1221-9118, pag. 109-113, 2014
18. Surgical strategies in sever acute pancreatitis: indications. Complications and surgical approaches Kiss L, Gh.N. Sarbu, A Bereanu ,R Kiss - Rvista Chirurgia, voi. 109, numărul 6, ISSN 1221-9118, pag. 774-782, BDI, 2014
19. Fracturile de bazin, urgente medico-chirurgicale. Bartos L, Kiss L. Kiss R - Acta Medica Transilvanica, voi. II, nr. 4, BDI, pag. 126-129, ISSN 2344 259XISSnl_ 2344 259, 2014
20. Indication, complication and Surgical Aproaches SAP L. Kiss, N. Sarbu, A. Bereanu, R. Kiss - Chirurgia, numărul 109, ISSN 1221-9118, BDI, 2014
21. Valoarea proteinei c reactive si rolul sau predictiv in PA Sarbu N, Kiss L, Kiss R. - Acta Medica Transilvanica, voi. II, nr. 3, BDI, pag. 82-84, ISSN 2344 , 259XISSnl_ 2344 259, 2014
22. Biopsia NLS in cancerul colorectal - studiul literaturii de specialitate Kovacs C, Kiss R., Bereanu A., Kiss L. - Acta Medica Transilvanica, voi. II, BDI, iunie 2014
23. Creativ protein si procalcitonina instabilirea infectiei postoperatorii si folosirea procaictoninei in aprecierea evolutiei severe a sepsisului postoperator Kiss L, Sarbu N., Bereanu A., Kiss R. - Acta Medica Transilvanica, voi. II, nr. 3, BDI, pag. 80-83, 2014
24. Complicatiile septice a chirurgiei colorectale pot modifica precoce nivelul sere a proteinei C reactive?
- Kiss R., Bereanu A., Kovacs C, Kiss L. - Acta Medica Transilvanica, voi. III, nr. 3, BDI, pag. 230-233, 2014
25. Biopsia NLS in cancerul colorectal Kovacs C, Kiss R., Beranu A., Kiss L. - Acta Medica Transilvanica, voi. II, nr. 2, BDI, pag. 99-103, 2014
26. Aspecte clinice si tomografice a complicatiilor pancreatitei acute Sarbu N., Kiss L, Bereanu A., Kiss R., Maniu D. - Medical Conection voi IX, numărul 1-33, BDI, pag. 79-85, 2014
27. Hemia inghinala complicata cu ocluzie - compararea tehnicilor Lihtenstein si Bassini Kiss L, Kiss R., Vaida O., Ștefan V. - Chirurgia număr special voi. 109 supliment, 2014
28. Indicațiile toracotomiei de urgenta Kiss L, Kiss R., Talvan E., Eremeev S., Sava M. - Chirurgia număr speciala voi. 108 supliment, 2014
29. Examination of six of fewer lymphonodes in Duk's B (TNM stage II) the impact of prognosis Kiss L, Kiss R., Porr PJ., Kovacs C, Sava M. - Chirurgia număr special voi. 109 supliment, 2014

Specializări și cursuri de perfecționare atestată

1979-2014

1979, U.M.F. Timișoara - Curs de perfecționare în chirurgia toraco-abdominală de

urgență;

1981, U.M.F. București, Institutul Fundeni - Curs de perfecționare în chirurgia cardio-vasculară periferică;

1983, U.M.F. București, Institutul Fundeni - Curs de perfecționare în chirurgia generală;

1985, U.M.F. București, Institutul Fundeni - Curs de perfecționare în complicațiile septice din chirurgia digestivă;

1986, U.M.F. Timișoara - Curs de perfecționare în ortopedie și traumatologie de urgență;

1987 - 1988, U.M.F. București, Clinica de chirurgie I. Cantacuzino - Curs de perfecționare în chirurgia icterului mecanic;

1989, U.M.F. București, Institutul Fundeni - Curs de perfecționare și stagiul în problemele leziunilor traumatice hepatice majore;

1991, Centrul Universitar din Salzburg (Austria) - Curs de perfecționare de bază prin A.O. International - absolvit și promovat;

1992, Centrul universitar (C.H.U.) Zurich - Elveția - Stagiul de perfecționare postuniversitară prin bursă A.. International;

1993, al 2-lea stagiul de pregătire postuniversitară la C.H.U. Zurich, Clinica de chirurgie, Spitalul Clinic Municipal Triemli, Prof.Dr. Urs Metzger, vicepreședintele Societății de chirurgie Oncologică Europeană;

în intervalul 1993 - 1996, în fiecare an am efectuat stagii de perfecționare cu durata de 1,5-2 luni la C.H.U. Zurich, Clinica de chirurgie, Spitalul Clinic Municipal Triemli, Prof.Dr. Urs Metzger, vicepreședintele Societății de chirurgie Oncologică Europeană;

1994, Davos, Elveția - Curs internațional de specializare în chirurgia convențională și laparoscopică, obținând în urma examenului, diploma de absolvire a cursului internațional;

13.01.04.-18.04.1996, Stagiul de perfecționare în chirurgia laparoscopică la nivelul C.H.U. Zurich, Clinica de chirurgie, Prof.Dr. Urs Metzger; 14. 1997, Stagiul de perfecționare de 30 de zile la C.H.U. Zurich, Clinica de chirurgie, Prof.Dr. Urs Metzger;

15.20.05.-22.05.1998., am absolvit 3 cursuri postuniversitare organizate de S.R.C.

București:

Managementul bolnavului critic;

Actualități în chirurgia vasculară, abdominală și periferică;

Chirurgia de graniță toraco-abdominală.

01.10.-31.10.1999., Stagiul de perfecționare la C.H.U. Ziirich, Clinica de chirurgie,

Prof.Dr. Urs Metzger;

18.10.-20.10.2000., am absolvit programul Actualități de diagnostic și tratament în pediatrie, Petroșani.

2.10.-5.10.2001., Al II-lea Curs intensiv de chirurgie laparoscopică Timișoara;

19.15.05.-17.05.2002., la Congresul Național de Chirurgie, Sinaia am absolvit 3 cursuri de perfecționare:

Actualități în tratamentul afecțiunilor venoase;

Chirurgie laparoscopică colo-rectală;

Situații dificile în chirurgia biliară.

În perioada 9.05.-11.05.2003. am participat și absolvit la București la al V-lea Simpozion și Curs postuniversitar al I.A.S.G. "Actualități în bolile ficatului".

Congresul național de Chirurgie 2004 / Sovata cu curs de perfecționare.

IASG Bucurest 2005 / Curs de perfecționare în Chirurgie Hepato/pancreatica.

Visiting professor la CHU / Zurich.

Cursuri

Cursul International de Colorectal Masterclass Noiembrie
2007 - Paris

Cursul internațional de training în Organ Donation Quality Managers

30 V - 3 VI 2008 - Barcelona

Membru în comitetul de organizare a celui de-al VII —lea congres de angiologie și chirurgie ambulatorie cu participare internațională, 18-20 X 2007, Timișoara

Prin Ordinul Ministrului Sănătății Publice Nr.557 / 26 III 2007 confirmat medic specialist în chirurgie toracică - a doua specialitate

**Participare ca membru în
comisii profesionale la
nivelul ULBS – For
Medicină**

2001 - prezent

Visiting Profesor

1. 2008,2009,2010 - Universitatea de Medicina Zurich - CH - Spitalul Clinic Triemli - Zurich
2. Institutul Oncologic Budapesta

**Participare ca membru în comisii profesionale pentru examene la
nivelul ULBS, Facultatea de Medicina "Victor Papilian":**

1. Membru în comisia de susținere a examenului pentru ocuparea postului de asistent universitar, Catedra IV - 27.11.2001, Sibiu;
2. Memru în comisia de ocupare a posturilor de preparator universitar, șef de lucrări în disciplina Chirurgie, Ortopedie, Catedra IV —11.03.2002, Sibiu;
3. Membru în comisia de examen prin Ordin MSF 126/19.02.2003. pentru ocuparea postului de medic specialist în Medicină de Urgență, Sibiu;
4. Membru în comisia de examen prin Ordin MSF 160/27.02.2003.pentru acordarea titlului de medic principal în chirurgie, Sibiu

**Participare în calitate de membru în Comisia Științifică de la
Conferințele studențești**

1. III-rd International medical Conference for students and Young Doctors, Sibiu, 7-10.11.2002.
2. Sesiunea de Comunicări Științifice pentru studenți și tineri medici, Sibiu, 18 -19.04.2002.
3. A IX-a Sesiune Națională de Comunicări Științifice pentru studenți și tineri medici "Asklepios", Sibiu, 17.05.2003.
4. A X-a Sesiune Națională de Comunicări Științifice pentru studenți și tineri medici "Asklepios", Sibiu, 17.05.2004.
5. A XI-a Sesiune Națională de Comunicări Științifice pentru studenți și tineri medici "Asklepios", Sibiu, 17.05.2005.

Membru în Comitete de Organizare congrese

1. Membru în Comitetul de Organizare al celui de-al IV-lea Congres Internațional de Angiologie Timișoara, 25 -26.10.2002;
2. Moderator în cadrul Congresului Național de Flebologie și Limfologie, Timișoara, 16-18.10.2002.
3. Membru în Comitetul de Organizare al celui de-al V-lea Congres Internațional de Angiologie Timișoara, 25 -26.10.2003;
4. Membru în Comitetul de Organizare al celui de-al VI-lea Congres Internațional de Angiologie Timișoara, 25 -26.10.2005;
5. Membru în Comitetul de Organizare al Congresului Internațional de Chirurgia Cancerului Colorectal, Timișoara octombrie 2005.

Funcții la nivelul societăților chirurgicale

2006-2014

1. Vicepreședinte al Societății Romane de Chirurgie Ambulatorie
2. Membru fondator al Societății Romane de Chirurgie de Urgență și Traumatologie și Vicepreședinte al S.R.C.U. într-un mandat 2006-2010.
3. Membru în International Society for Protetics and Ortotetics - din 2008.
4. Membru în European Association for Endoscopic Surgery.
5. Membru în conducerea societății române de chirurgie de urgență și traumă din 2013

Membru în societățile de specialitate

1. Societatea Română de Chirurgie
2. Societatea de Chirurgie Laparoscopică și Suturi Mecanice
3. Societatea Română de Chirurgie de Urgență Timișoara
4. Societatea de Chirurgie Timișoara
5. Societatea de Chirurgie Hepato-biliară Cluj-Napoca
6. International Gastro Surgycal Club
7. Societatea de Chirurgie Maghiară
8. Societatea de Chirurgie Austriacă
9. Societatea Internațională de Boli ale Esofagului Japonia (I.S.D.E.)

**Participări la manifestări
științifice din 1998 - prezent**

10. Societatea A.O. International Elveția (Zurich)
 11. International Society of Surgery
 12. Vicepreședinte al Societății Române de Chirurgie de Urgență și traumatologie
 13. Membru în redacția revistelor:
 - a. Revista Sibiul Medical
 - b. Cercetări Experimentale Medico-chirurgicale.
-
1. Congresul al VUI-lea National de Angiologie si Chirurgie Vasculara Cluj- Napoca 4-5 VI2009, Diploma 140: Soc.Romana de Chirurgie Vasculara
 2. La al XXIII-lea Congres National de Chirurgie, Diploma CMR 2111/5 V 2006; Soc.Romana de Chirurgie.
 3. Congresul IASG - 03.04.2006 București Certificat of attendance nr. 167
 4. Al XXVIII-lea Simpozion National cu participare internaționala de gastro enterologie si hepatologie, endoscopie digestiva, Diploma CMR 1027 08.03.2007. Soc. Romana de Gastroenterologie si endoscopie digestiva.
 5. Magyar Sebesz Tarsasag 59 Kongresszusa, 18-20 VI2008 Debrecen
 6. Al VH-lea Congres de Angiologie si Chirurgie Ambulatorie, 18-20 X 2007 Timișoara. Soc. Romana de Chirurgie Ambulatorie.
 7. Participare la Workshop on prevention and interventional in the Atterosclerotic criticai limb ischemia, 15-17 V 2008 Cluj Napoca
 8. Congresul National de Chirurgie 4-7 VI2008 Eforie Nord, Diploma 3295/ 30 V 2008. Soc. Romana de Chirurgie.
 9. Simpozionul Noi perspective in Insuficienta Venoasa cronica 15 XI2007, Diploma 39/15 XI2007. Soc. Romana de Flebologie.
-
10. Al X-lea Congres Roman de Flebologie 16-18 X 2008 Timișoara, Diploma 5693/ 18 X 2008. Soc. Romana de Flebologie.
-
10. Congresul anual al secțiunii de coloproctologie al Societății de Chirurgie Maghiara si la cursul suprauniversitar, 13-14 II2009, Budapesta
 11. Participare la Congresul anual al Societății elvețiene de Chirurgie Viscerala si Digestiva,

- 2008, 2009, 2010 (Lausanne, Basel, Geneva)
12. Participare la Congresul anual al Societății austriece de chirurgie, 2010- Linz
 13. Conferința Națională de Chirurgie 27-29 V 2009 Tg. Mureș
 14. Conferința Națională de Chirurgie 18-21IV 2007, Diploma 261/ 29 III 2007
 15. Simpozionul Actualități în tratamentul cu imunoglobuline nespecifice, Sibiu 28 IX 2009, Diploma 9035/ 28 IX 2009
 16. Congresul Național al VH-lea de Angiologie și Chirurgie Vasculară, 24-26 V 2007, Băile Felix, Diploma 130/24-26 V 2007
 17. Congresul Național de Chirurgie, 3-6 V 2010 Cluj Napoca
 18. Cursul Internațional Terapie Oncologică multidisciplinară a tumorilor solide, Budapesta, 22-24 IX 2010
 19. Diploma de lector în „Scleroterapie în boala venoasă cronică” Sibiu 19-22 I 2011, Diploma 19/22.01.2011
 20. Zilele Medicale Sibiene 11-14 XI2010, Diploma 35/ 12 XI2010
 21. 17th World Congress of the IASGO 5-8 IX 2007 București, Diploma 1732 / 2007
 22. Participare la al XI-lea Simpozion al Secțiunii române IASGO, Diploma 1700/ 25 III 2009. org. IASGO
 23. Simpozionul Zilele Medicale Sibiene, Diploma 12/15 XI2009
 24. A 3-a Conferința a doctoranzilor în Medicină și Farmacie, 7-9 VII 2010 Tg. Mureș cu participare internațională.
 25. Al V-lea Congres Național al Asociației de Chirurgie Endoscopică 11-14 XI 2009, Diploma 5312 / 28 X 2009, Org. Soc. Română de Chir. Endoscopică.
 26. III-rd International medical Conference for students and Young Doctors, Sibiu, 7-10.11.2002.
 27. Sesiunea de Comunicări Științifice pentru studenți și tineri medici, Sibiu, 18 -19.04.2002.
 28. A IX-a Sesiune Națională de Comunicări Științifice pentru studenți și tineri medici "Asklepios", Sibiu, 17.05.2003.
 29. A X-a Sesiune Națională de Comunicări Științifice pentru studenți și tineri medici "Asklepios", Sibiu, 17.05.2004.
 30. A XI-a Sesiune Națională de Comunicări Științifice pentru studenți și tineri medici "Asklepios", Sibiu, 17.05.2005.
 31. Al 59-lea congres al societății maghiare de chirurgie 2009

32. Congres National de Chirurgie cu participare internațională 2012 luna V Timișoara
33. CHU – Zurich – Triemli Spital – visiting profesor 2012 invitat de prof. Dr. Marcus Weber, prof dr. Metzger Urs
34. Al 23-lea Congres Mondial IASG București 16-21.09.2013 Diploma 326/21.09.2013
35. International Medical Congres for Students and young doctors Asklepios 2013 Sibiu 25-28.04.2013
36. A VI-a Conferință Internațională de Chirurgie Piatra Neamț 3-6.10.2013
37. Conferința Națională de chirurgie cu participare internațională 3-5 iunie 2013 Sinaia.
38. Invitat ca observator internațional la visceral – gastrointestital acuts Kurs 17-18 III 2014 Graz Acreditat prin EALCME – European
39. Invitat visiting professor 4-9 octombrie 2014 Zurich
40. A VI-a Conferință Internațională de Chirurgie Piatra Neamț 3-6.10.2014
41. International Medical Congres for Students and young doctors Asklepios 2013 Sibiu 25-28.04.2014
42. IX th Romanian – Serbian Conference of surgery Sibiu November 27-28. 2014
43. Conferința Națională de Chirurgie cu participare internațională 3-5 iunie 2014 Sinaia

Membru în comitete de organizare congrese

1. Membru în Comitetul de Organizare al celui de-al IV-lea Congres Internațional de Angiologie Timișoara, 25 -26.10.2002;
2. Moderator în cadrul Congresului Național de Flebologie și Limfologie, Timișoara, 16-18.10.2002.
3. Membru în Comitetul de Organizare al celui de-al V-lea Congres Internațional de Angiologie Timișoara, 25 -26.10.2003;
4. Membru în Comitetul de Organizare al celui de-al VI-lea Congres Internațional de Angiologie Timișoara, 25 -26.10.2005;
5. Membru în Comitetul de Organizare al Congresului Internațional de Chirurgia Cancerului Colorectal, Timișoara octombrie 2005.
6. Membru în comitetul de organizare a celui de-al VII-lea congres de angiologie și chirurgie ambulatorie cu participare internațională, 18-20 X 2007, Timișoara.



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Prof. Dr. med. Kiss Lorant
Department of Surgery
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RO - Sibiu

Zurich, October 22th, 2018

Confirm your visits

Dear Professor Kiss

It is pleasure to confirm that you visited our Hospital in the following years:

- 1992 three month AO-Fellowship
- 1993 three month AO-Fellowship
- 1994 three month AO-Fellowship

- 1995, 1997, 1998, 1999, 2001 you have visited our Surgery Department as Visiting Chairman of Surgery.

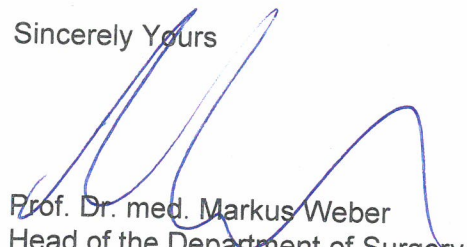
- 2005, 2007, 2009, 2011, 2015 and 2017 you have visited our Surgery Department as Visiting Professor of Surgery.

It was a great pleasure and honour for us to have you as Visiting Professor of Surgery to our Department of Operative. It was also a benefit for our team to see how it works in another country in Europe and to see what the problems in their daily business are; we profit a lot from this relationship between our hospitals.

We hope to see you soon again and wish you all the best for your professional and private live.

With best academic regards

Sincerely Yours



Prof. Dr. med. Markus Weber
Head of the Department of Surgery



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Prof. Dr. med. Kiss Lorant
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RO - Sibiu

Zurich, September 14th, 2015

INVITATION as a Visiting Professor of Surgery, September 20 – 4 October, 2015

Dear Professor Kiss

It is a great pleasure and honour for us to invite you again as Visiting Professor of Surgery to our Department of Operative Medicine in September/October 2015. As in previous years, your visit will be of great scientific value for both sides, and we are looking forward seeing you soon again!

With best academic regards

Sincerely Yours

Prof. Dr. med. Markus Weber
Head of the Department of Surgery



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Zurich, June 2th, 2017

Confirm as a Visiting Professor of Surgery, May 20 – 5 June, 2017

Dear Professor Kiss

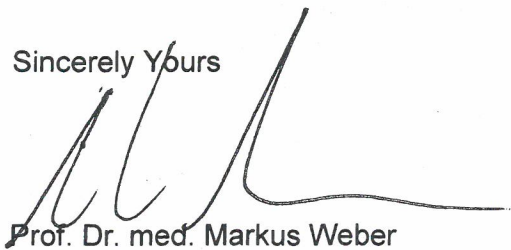
It is a great pleasure to confirm that you have visited our Surgery Department, May 20 – 2 June 2017.

It was a great pleasure and honour for us to have you again as Visiting Professor of Surgery to our Department of Operative. It was also a benefit for our team to see how it works in another country in Europe and to see what the problems in their daily business are; we profit a lot from this relationship between our hospitals.

We hope to see you soon again and wish you all the best for your professional and private life.

With best academic regards

Sincerely Yours



Prof. Dr. med. Markus Weber
Head of the Department of Surgery



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Zurich, December 17th, 2018

Confirm your visits

Dear Professor Kiss

It is pleasure to confirm that you visited our Hospital in the following years:

- 1992 three month AO-Fellowship
- 1993 three month AO-Fellowship
- 1994 three month AO-Fellowship

- 1995, 1997, 1998, 1999, 2001 you have visited our Surgery Department as Visiting Chairman of Surgery.

- 2005, 2007, 2009, 2011, 2015 and 2017 you have visited our Surgery Department as Visiting Professor of Surgery.

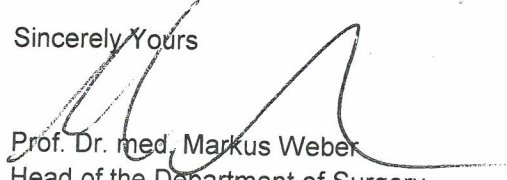
The first three times, when Professor Kiss was visiting our Hospital he was operating with our trauma surgeons. During this time a friendship between Professor Kiss and Professor Metzger, the retired chief physician, started. Throughout the following years, Professor Metzger and Professor Kiss had a good scientific and friendly contact between the both Hospitals.

In 2010 I took over the succession as chief physician of Professor Metzger. It was a pleasure for me to continue this friendship with Professor Kiss and our Hospitals.

It was a great pleasure and honour for us to have you as Visiting Professor of Surgery to our Department of Operative Disciplines. It was also a benefit for our team to see how it works in another country in Europe and to see what the problems in their daily business are; we profit a lot from this relationship between our hospitals.

We hope to see you soon again and wish you all the best for your professional and private live. With best academic regards

Sincerely Yours


Prof. Dr. med. Markus Weber
Head of the Department of Surgery

PUBLICAȚII 2019

Colorectal cancer-number of lymphnodes (LN) examine

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Abstract

We analyzed retrospectively surgical specimens from 345 colorectal cancer. The aim was to estimate the value of sampling lymph nodes (LN) located far sidelong colorectal cancer specimens. The fat from the mesocolon and perirectal space was divided into 2 fractions: close to (less than 5 cm) and distant (more than 5 cm) from the tumor.

Tumors was located in the cecum (n=61), ascending colon (n=29), transverse colon (n=31), descending colon (n=27), sigmoid colon (n=108), rectum (n=89). The median number of LN sampled was 17 in the both fractions (range 4-26), 12 (range 0-21), in the close fraction and 3 (range 0-28), in the distant fraction.

There were 169 pNo, 104 pN1, and 72 pN2 cases. The pN staging was accurate, except 10 based on the close fraction alone: of these, 6 were upstaged from pNo to pN1 and 4 from pN1 to pN2, were the distant fraction was considered. In the colon, we found that LN location is more important than LN number because metastatic LN were present mostly in the peritumoral area. The suggests that LN should be initially recovered from the pericolic fat, close to the tumor.

If there are less than 4 positive LN and less than 12 LN examined in total, additional LN should be retrieved from the distal fraction for potential upstaging.

In the rectum, systematic sampling of close and distant LN is very important because rare cases, metastases are detected only in the distant LN, particularly at the patients who have undergone neoadjuvant radiotherapy.

Introduction

The presence of LN metastases in colorectal cancer is currently the most important factor in determining the indication for adjuvant therapy and is on the most important factor in estimation survival [1-6]. The total number of LN examined from colorectal cancer surgical specimens is associated with improved survival possibly because of increased accuracy in staging [2,6,7]. Cohen showed that the number of positive LN was related inversely to prognosis (pN1, 66% 5 years survival), with the optimal dichotomization between 1 to 3, and 4 or more LN (pN2, 37% 5 years) [1,8].

Recovering a larger number of LN reduces the possibility of missing a metastatic LN. The total number of LN required for adequate staging has long been a matter of controversy. The results from different series suggest that a minimum of 6 to 17 LN should be investigated for reliable node-negative staging [2-5,9] and the American Joint Committee on Cancer (AJCC) and IUAC (International Union Against Cancer) recommend a minimal assessment of 12 LN for accurate staging [10,11]. The extent of intestinal resection for colorectal cancer is related to the vascularization of the colon and rectum. This leading surgeon to resect broader regions than considered strictly necessary from an oncologic point of view.

The contribution made by LN located in adjacent tissues relatively distant from the colorectal cancer was not investigated and their relative roles have not been taken into account in nodal staging. Systematic sampling of LN located in adjacent fat tissue relatively far from the colorectal cancer is both expensive and time-consuming and few studies have addressed it is a potential impact on pN status [9].

To determinate the value of systematically sampling distant LN in colorectal cancer surgical specimens in which the mesocolic and perirectal fat was divided into 2 fractions one close to the tumor (less

than 5 cm) and the other distant from the tumor (more than 5 cm from both sides of the tumor).

Materials and methods

In this retrospectively study, we reviewed reports from the Pathology Department of Sibiu, from the 1st Surgical Clinic for all primary colorectal cancer surgical specimens collected between 2003-2014. A total 498 cases were reviewed, and 153 cases were excluded from the study because 10 cases of secondary excision for local tumor recurrence, 24 cases of multiple tumors and 119 cases in which proximal and distal fraction of the mesocolic and perirectal fat was not adequately individualized from colorectal cancer during microscopy.

In total 345 cases were eligible for this study. Among the patients who have rectal cancer (n=89), 28% (n=25) had been treated with neoadjuvant radiotherapy, the rest of the patients benefited from postoperative radiotherapy as it was recommended in our hospital during the period. The mesocolic fat was divided to harvest LN from the colon cancer surgical specimens into fractions A and B. Fraction A was close to the tumor (less than 5 cm from both sides of the tumor). Fraction B was distant from the tumor (more than 5 cm). In colorectal tumor the direct extension of tumor cells in the intestinal wall did not occur more than 5 cm far from the primary tumor [12-14].

To guarantee Ro resection independently from LN and/or anatomic or vascular consideration a 5 cm safety surgical border was

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considered to be adequate. To harvest the LN of rectal cancer the perirectal fat (fraction A) and the perisigmoidian fat (fraction B) were separated. The same approach was exactly used for LN dissection in fraction A and B. The 2 fractions were separated into 2 different bottles and LN sampling was made the next day. LN staging was defined according to the TNM classification as pNo (0 positive LN), pN1(1-3 positive LN), a d pN2 (4 or more positive) [10,11]. Cutoff values of 12 or 18 LN were chosen according to the minimum number of LN recommended by the IUACC and according to Goldstein [4,5] who recommend a higher number (more than 18) of LN.

Results

The number of LN in colorectal cancer surgical specimens is stored in Table 1. Tumors was located as follows: cecum (n=61), ascending colon (n=29), transverse colon(n=31), descending colon (n=22), sigmoid and rectosigmoidian junction (n=108) and rectum(n=89). The mean number of LN recovered from location was as follows: cecum (n=18), ascending colon(n=20), transvers colon (n=19) descending colon(n=17), sigmoid and rectosigmoidian junction (n=17) and rectum (n=10). The mean number of total LN sampled was significantly higher in the ascending and transverse colon and significantly lower in the rectum (p=0.0001).

The mean number of LN sampled in both fractions was 18, the mean number of LN from the close and distant fractions respectively were 13 and 4,9 which is statistically significant. The relationship between tumor infiltration (pT stage) and the LN status (pN stage) is shown in Table 2.

There were 11 pT1 ,42 pT2 ,20 pT3 and 87 pT4 ,169 pNo, 10 pN1, 72 pN2. There was no significant difference in the LN mean number among pNo, pN1 and pN2 whereas the LN mean number was significantly bigger in pT3 and pT4 tumors (both 19) compared with pT1and pT2 tumor (14 and 15 respectively, p=0,0031).

The percentages of LN found in fractions A and B were respectively 58% and 42 % for pT1 ,70% and 30% for pT2,74%and26% forpT3 and 73% and 27% for pT4 tumors. The relationship between total LN count and the number of patients with positive LN is shown in Table 3.

The number of patients with positive LN was significantly bigger (59%) when they had at least 12 LN sampled compared with patients from whom less than 12 LN were sampled (45 % p=0,127). There was no significant difference between the group of patients with less than 12 LN sampled (46%) and the group with more than 12 LN but less than 18 LN sampled (44%) p=88,60.

When only LN from fraction A (close to the tumor) were considered the pN (pN0, pN1, pN2) would have been accurate in 97% of colorectal

Table 1. LN status and location of tumors

Tumor location	Number of cases	Mean total number of LN	Mean number of LN in the close fracture	Mean number of LN in the distal fracture
Cecum	61	18	13	4,6
Ascendent colon	29	20	14	5
Transverse colon	31	19	12	8
Descendent colon	27	17	11	4
Sigma, rectosigmoid junction	108	17	14	3,8
Rectum	89	10	12	3,9

Total 345

Table 2. Relationship between pT stage, pN stage and LN number

	pN0(N°)	pN1(N°)	pN2(N°)	Total	N° mean LN
pT1 n°	10(91)	0(0)	1(9)	11	14
pT2 n°	26(62)	13(31)	3(7)	42	15
pT3 n°	102(50)	62(30)	41(20)	205	19
pT4 n°	31(36)	29(44)	27(31)	87	19
Total	169	18,2	19,5		
LN mean N°	18	18,2	19,5		

Table 3. Relationship between total LN count and LN metastasis

Total LN count	Number of patients	Number of patients with +nodes			Number of patients with + nodes			Number of upstaged cases in fraction B
		Total	pN1	pN2	In A	In B	In A+B	
<12	93	43 (46%)	24 (56%)	19 (44%)	35 80%	2 5%	6 15%	2 to pN1 and 3 to pN2
≥16 <20	104	46 44%	33 72%	13 28%	42 92%	2 4%	2 4%	2 to pN1 1 to pN2
12-16	148	87 59%	47 54%	40 46%	72 84%	2 1%	13 15%	2 to pN1
Total	345	176	104	72	149	6	21	0

cancer specimens. After examining LN from fractions, A and B, 6 of these 10cases were upstaged from pN0 to pN1 and 4 were upstaged from pN1 to pN2. In 93 (27%) cases, less than 12 LN were sampled in the proximal and distal fractions of mesorectal and pericolic fat and in 160 (46%) cases, less than 12 LN were sampled in the proximal alone.

Discussion

In surgical resection in patients with colorectal cancer, it is very important to remove on bloc the tumor with adequate proximal and distal bowel regions to include any submucosae lymphatic areas to which metastases might spread, including the regional mesenteric draining lymphatic system.

Despite these guidelines, there is an evident amount of variability in the type of resection performed for colorectal cancer. which could lead to variability in the number of LN removed.

The number of LN found in surgical specimens varies from patients, depending on several factors, including tumor localization, the pathologic examination and the method used to harvest LN [2,3,6,15-18].

Canessa showed that the mean number of LN found in colorectal cancer surgical specimens varies from 62 to 36 with manual dissection alone. Hence, the minimum recommended number of 12 LN cannot be guaranteed for every colorectal cancer specimen [19]. In many cases the average number LN examined per patient is often lower than 12, suggesting that a large number of patients with colorectal cancer are staged inadequately [3,17,20,21].

In some studies, up to 78% of patients have been less than the minimum required the number of LN staged [3]. These situations indicated the use of special techniques (acetal clearing) to try to reach the minimum required LN [19].

An optimal number of LN to be examined in colorectal cancer specimens probably does not exist [22] and some authors, therefore, recommended recovering as many LN as possible [22].

In our opinion, the problem is not so much the number of LN to be harvest as how to be detected those LN most susceptible to be metastatic. In this study, the mean number of total LN sampled was significantly

higher in the ascending and transverse colon and significantly lower in the rectum ($p=0,0001$), with previous studies [3,15] According to other studies [16,23], we found that the mean number of LN retrieved was significantly higher in pT3, pT4 tumors compared with pT1 and pT2 tumors [14] ($p=0,037$) suggesting that there is the close relationship between the tumor stage and detectable LN [17,5].

Thorn found a positive correlation between tumor diameter and LN count, a possible explanation for these is that larger tumor is more likely to ulcerate [16]. The tumor necrosis, with an ulcerative process, would induce reactive changes in proximal LN, with secondary enlargement of them, this facility the identification during the LN dissection. We also found that the median number of LN in the distant fraction was substantially lower than the median number of LN recovered from the close fraction and this result is consistent with other studies [9]. We found that the proximal /distal LN ratio increases with tumor pT stage. This is in accordance with the postulate that the total number of LN recovered depends primarily on their distance from the tumor and that if no other causes of lymph adenomegaly (Chron disease, diverticulitis). The LN identifiable by palpation are most often located very close to the tumor and only a small number of such nodes are found at distances of 3 cm or more from the edges. In our series the mean number of LN recovered from the distance fraction was 4,9 (range 0-19).

We found a positive correlation between the total LN count and the number of patients with positive LN patients with 18 or more LN routinely had more potentially metastatic LN than patients with less than 18 LN ($p=0,127$).

IN contrast there were no difference in LN metastases in cases with less than 18 LN sampled compared with who had less than 12 LN sampled. This result suggests that for minimum count 12 LN it is not enough and that more LN should be sampled.

In this study we separate LN located in the proximal and distal fractions of the tumor, based on previous findings that direct extension of the tumor cells in the intestinal wall did not detect more than 5 cm apart from the primary tumor [12-14].

In our study we found that 85% of the metastatic LN were located proximal of the tumor and the ratio of distribution (proximal or distal of the tumor) of metastatic LN did not change significantly among patients with more or less than 12 or 18LN sampled.

In a study of 2427 patients with pT3 colorectal cancer resulted at a single institution over 45 years Goldstein *et al.* [4,5] showed that no minimum LN accurately or reliably stages all patients [17] and the predictive probability of identifying a single positive LN increased in a linear manner as the number of dissected LN increased.

In our study in the close fraction alone 46% of cases had less than 12 LN sampled and when both proximal and distal fractions were examined that number was decreased to 27%. This finding suggests that be limiting the sampling area to less than 5 cm close to the tumor. We have more cases with a less than optimal number of dissected LN is expected.

The pathologic pN staging (pNo, pN1 and pN2) was accurate in all but 10 (2,9%) of the 345 colorectal cancers when the proximal fraction alone was examined. Of the 10 cases, 6 were upstaged from pNo to pN1 and 4 from pN1 to pN2 when LN from the distant fraction were included.

The results confirm the results of a similar study from Cserni in which 100 colorectal cancers surgical specimens were analyzed

prospectively and LN sampled were separated into 4 fractions, each a certain lateral distance from the tumor. In their study they found that all but one case of colorectal cancer were classified as pNo, pN1, pN2 based on the 2 close fraction (at most 3 cm apart from the tumor) [9] of the 6 cases upstaged to pN 1 it is worth noting that 5 of the cases occurred in the rectum and 3 of those patients had neoadjuvant radiotherapy. Neoadjuvant radiochemotherapy is associated with significantly fewer tumor positive LN [24].

Some study has also shown that radiotherapy induces significant shrinking of LN within the radiotherapy field [2,24]. These finding suggest that LN must be retrieved from all of the fat resected with the rectal cancer surgical specimen to sample an adequate number of total LN and to detect LN metastases that may be missed by examining mesorectal fat alone. Arguing that LN size does not correlate with the presence of metastases (up to 78%) of nodes + are smaller than 5 mm [23] and that very small nodes can easily be missed during examination. Use several fat clearing methods, but those technique are also expansive and time consuming.

We conclude that peritumoral LN are the most susceptible to be metastatic in colon cancer. To decrease the cost effect and the time of colonic cancer surgical specimen management LN should be retrieved only from the pericolic fat close (less than 5 cm) to the tumor. If there are less than 4 positive LN and less than 12 LN examined in total, additional LN should be retrieved from the distal fraction to detect additional metastases, which could result in an upstaged to pN2.

Conclusion

In our study in 66 % of cases from colonic cancer cases distal fraction dissection was unnecessary, when this recommendation was applied. It is worth noting that the pN2 stage changes the prognosis. In contrast in the rectal cancer cases specimens systematic sampling of distant LN is mandatory because in rare cases metastases arise in distant LN only, particularly in patients who have had neoadjuvant therapy.

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Histopathological lauren classification of gastric carcinoma with biopsy specimen and a histological difference with dysplasia

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Abstract

Background: The aim of this study was to show whether endoscopic biopsy specimens are adequate quality to enable reliable classification of gastric cancer, about differentiation, the presence of signet ring cells, or histologic type, and a histological difference with Dysplasia.

Method: In the present study, 154 patients with gastric carcinoma, with biopsy and surgical specimens were analyzed; and compared with the biopsy for suspected gastric carcinoma. In the gastric carcinoma biopsy specimens, (154 cases) the sensitivity and specificity were 86% and 82% respectively for intestinal type, and 87% and 90% respectively for the diffuse gastric carcinoma. The results of the pathology between endoscopic biopsy and surgical specimen analysis were 70%.

Conclusion: In gastric carcinoma, the degree of misclassification is largely independent of whether the source of the material is a biopsy or surgical specimens, and this is important in the preoperative planning of the surgical strategy.

Introduction

In clinical practice, the Lauren classification seems to be of significance as a prognostic indicator and as a basis for decision with regard to surgical strategy [1,2]. The advent of a flexible endoscope and its worldwide use in gastroenterology practice has made use in gastroenterology practice has made a major impact in the management of gastric cancer. Whereas the intestinal type of gastric cancer spreads only a few millimeters into grossly normal stomach wall, tumor cells can be found several centimeters beyond the macroscopically visible margins of the diffuse type of tumor, recasting wider surgical margins in the later type [2]. Signet ring cell cancer corresponds largely to the diffuse type of gastric cancer, having similar prognosis [3,4]. Because the tissue available for histology and classification is less in biopsy specimens than in surgical specimens, we evaluate the importance of the histology based on biopsy by the Lauren method; and the prevalence of signet ring cells carcinoma.

Methods

An experienced pathologist classified and reviewed 154 biopsy specimens and surgical specimens from tumors in accordance with Lauren types. In all cases were assessed the grade of differentiation and the presence of signet ring cells carcinoma.

The biopsy specimens were stained using the hematoxylin-eosin procedure. The standard for classification the results after histology were on the basis of surgical specimens. For all endoscopic biopsy materials, the histopathology estimated the type after Lauren classification, the presence of signet ring cells, and the tumor grade of differentiation. In Lauren P definition [5] the intestinal type is characterized by large cells with a definitive glandular pattern, and the "diffuse" type has poorly differentiated cells and rarely forms glandular structures. The rapport from histology shown that in biopsy specimens the image of

histology was uniform, and in surgical specimens, the heterogeneity made classification difficult, but not in all cases. For signet ring cells carcinoma, we used the description from Herman K [6], characterized by a large volume of intra cytoplasmic mucin sufficient to compress the nucleus against the periphery of the cell. In the histopathology we introduced the Japanese classification of gastric cancer after publication from M. Ruge *et al.* [7] (Table 1).

Results

In the present analysis, a table of 154 histologically confirmed gastric adenocarcinoma was the study base. In all cases were verified by both gastric biopsy and resection specimens, and those are the form of present analysis. The histopathology in the biopsy and surgical specimens are given in Table 2. The result of the present study shown that there were no major differences between the histological types between the biopsy and surgical specimens. The concordance between diagnosis based on biopsy and surgical specimens in gastric carcinoma with Lauren classification shown 78% agreement (Table 3).

The concordance between diagnosed based on biopsy and surgical specimens regarding histological differentiation of gastric carcinoma is shown in Table 4. In the suspicions for invasive gastric carcinoma in some specimens, clearly neoplastic epithelium is present, but invasion cannot be clearly identified (Figure 1).

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Table 1. Japanese classification of gastric cancer [7]

Category	Definition	Histologic description
Group I	Normal mucosa, with no atypia	Normal and benign lesion with no atypia; including intestinalized epithelium and hiperplastic epithelia
Group II	Lesion showing atypia but diagnosed as benign	1. Native or intestinalized epithelium with atypia, frequently associated with inflammation 2. Hyperplastic polyps showing atypia caused by erosion
Group III	Borderline lesion between benign and malign	It applies frequently to adenomatous lessions and rarely to lesions difficult to diagnosed as either benign or malignout.
Group IV	Lession strangely suspected for carcinoma	Lession strangely suspected for carcinoma
Group V	Carcinoma	Adenocarcinoma

Table 2. The histologic classification in 154 adenocarcinoma of the stomac lauren classification, signet ring carcinoma in biopsy and surgical specimens

Classification	Biopsy specimen %	Surgical specimen %
	Lauren classification	
Intestinal	61,0	59,1
Diffuse	31,6	40,2
Mixed	3,2	8,0
Unclassified	4,2	2,7
Total	100,0	100,0
	Prevalence of signet ring carcinoma	
0%	59,1	54,9
1-24%	18,9	22,0
25-49%	11,0	13,1
50-74%	8,4	5,9
75-100%	3,0	2,2
Unclassified	3,6	2,0
Total	100,0	100,0
	Differentiation	
High	7,0	10,0
Medium	30,9	28,9
Low	5,0	57,6
Undifferentiated	51,9	1,0
Unclassifiable	3,4	2,9
Total	100,0	100,0

Table 3. Concordance between biopsy and surgical specimens in gastric carcinoma regard to Lauren classification

Biopsy and surgical specimens			
	Intestinal		Diffuse
Sensitivity	85%		87%
Specificity	81,1%		91%
False positive	13%		21%
False negative	15%		12,9%

Table 4. Differentiation concordance in gastric carcinoma between biopsy and surgical specimens

Biopsy and surgical specimens with concordance differentiation				
	Moderate		Poor	Undifferentiated
Sensitivity	45%		63%	82%
Specificity	95%		87%	77%
False positive	53%		35%	17%
False negative	55%		37%	19%

Discussions

Despite almost universal trends of declining mortality rates, gastric carcinoma remains a major health problem. Surgery is recognized as the only treatment offering cure of the disease, but in most cases, it does not accomplish the task, as reflected by the fact that 5-year survival rates in most countries remain under 20% [8-10].

The advent of the flexible endoscope and its worldwide use in clinical practice has made a major impact in the management of gastric cancer. This impact has been most prominent in Japan, were close to 50% of gastric cancer are diagnosed in their early stage, limited to the mucosal and submucosal layers [7,11,12]. In the present study in 42%

of the tumors, the biopsy specimens were the only ones available of the incident cases. In this study, the sensitivity of biopsy specimens was 85% in intestinal and diffuse Lauren type of gastric carcinoma. In previous studies, the authors have found 72-75% agreement between biopsy and surgical specimens with regard to the histological classification of Lauren [1,13-15].

An Italian study found a sensitivity of 85% and 64% and a specificity of 77% and 91% for intestinal and diffuse type carcinoma. The Lauren classification may also be of clinical importance there are reports of better survival among patients with the intestinal type compared with the diffuse type of gastric cancer [1,16-21]. For the surgery preoperatively, it is difficult to discern the border between tumor-

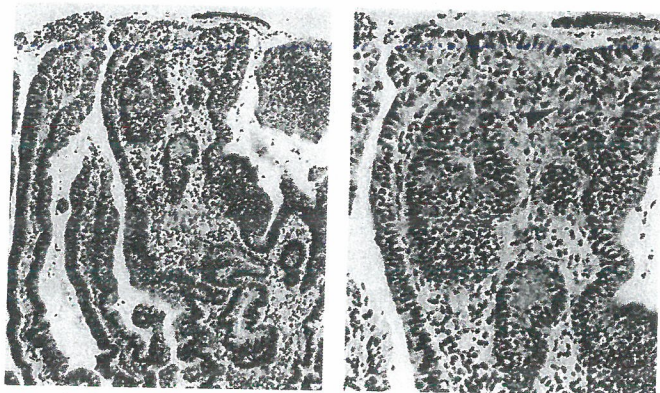


Figure 1. A) atypical epithelium, B) The presence of positive invasion of the lamina propria and the definition "suspicion for invasion" is adequate in such situation

infiltrated and normal gastric wall macroscopically. Because it is very difficult to discern the real invasion of the tumor cells, intramurally, in the resected specimens for the diffuse type of gastric carcinoma, the cancer infiltration of the resected margins in higher frequency [22-25].

These observations justify the importance of preoperative information about the Lauren type, as adequate resection margins are required for the intestinal or diffuse carcinoma [26,27]. For Hornig et al (28), in the diffuse type, a proximal resection margin of 10 cm in situ is described, whereas 4 cm in situ is considered enough in the intestinal tumors [28-30].

In the present study, signet ring cells were identified in 42% of all resected specimens, lower than the 60% found in a small American Study [31]. A recent, essentially population-based American Study found signet ring cell cancer in 8% [16]. Histopathologic subtyping of biopsy specimens obtained at gastroscopy is possible with acceptable reliability with regard to the Lauren classification. This observation is of importance in preoperative planning of surgical strategy. The morphology of gastric carcinoma shows a substantial variation of histopathological differentiation. Among the various classification systems that were developed in the past, the most widely used are those proposed by Lauren, and the World Health Organization (WHO).

The extent of luminal resection depends on tumor size, location, depth of invasion, and histological type as reflected by Lauren classification. If a carcinoma biopsy is falsely interpreted as being the intestinal type, the extent of resection would be too small, in the reciprocal case with an inadequate diagnosis of a diffuse type cancer) perhaps too extensive. On the other hand, if an intestinal type carcinoma diagnosed in the biopsy shows a diffuse growth pattern in the resected specimens, a subtotal gastrectomy, and a reduced safety margin would embrace the risk of a local recurrence, with the higher risk of metastases.

Therefore, the reliability of a preoperative Lauren classification of biopsied gastric cancer is a relevant problem in surgical oncology. Jonasson reported a disagreement between histological diagnosis based on preoperative biopsies and resection in 65 of 382 patients (17%). Davesarr reported an overall histological diagnostic disagreement between the pre and postoperative classification in 28%, and Amarosi in 23%. For Jonasson, the agreement for diffuse carcinomas in biopsies was only in 75% [32].

Conclusion

The diagnosis of a diffuse-type carcinoma is a reliable result of the histopathological evaluation of biopsy specimens, whereas the diagnosis of an intestinal type has to be judged critically. Especially if only a small number of biopsies could be investigated, biopsies should be performed.

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Discussions on Changes in Gastric Lymph Drainage in Malignant Gastric Pathology in Terms of Intraoperative Lymphography



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Abstract

Introduction: The system of drainage proposed by Rouviere was on the whole confirmed; however, one should emphasize the doubling of the hepatic chain, the existence of long collectors which bypass a relay in the left gastric artery, the importance of the posterior gastric artery which transmits the lymphatic of the splenic chain. Finally, the authors emphasize the existence of 3 longitudinal areas on the stomach where the presence or absence of valves in the subserous collectors orients the lymph towards the lesser or greater curvature of the stomach, which easily explains the onset of isolated carcinomatous adenopathy, situated on the curvature opposite the neoplasm.

Background: In cancer gastric there are several staging systems for lymph node metastasis. The pN classification of gastric cancer is currently based on the distance of metastasis nodes from the primary tumor, and the UICC (Union International Centre le Cancer) has proposed a new classification system based on the number of the involved nodes. The aim of the present study: the author became interested in the lymphatic drainage of the stomach involved by the cancer, in order to attempt to determine for each region the type of drainage and the risk of the cancer spread.

Methods: The author studied 150 dissection including the resected stomach, 230 cases records of gastric carcinoma, 24 lymphographies by ultrafluid Lipiodol, and 100 preoperative in Vivo injections of vital (dye in stomach carcinoma).

Results: The system of drainage proposed however, one should emphasize the doubling of the hepatic chain, the existence of long collectors which bypass a relay in the left gastric artery, the importance of the posterior gastric artery which transmits the lymphatic of the splenic chain.

Conclusion: Finally, the author emphasize the existence of 3 longitudinal areas on the stomach where the presence or absence of valves in the subserous collectors orients the lymph towards the lesser or greater curvature of the stomach, which easily explains the onset of isolated carcinomatous adenopathy situated on the curvature, opposite the neoplasm. The results from the present study suggest a more extensive operation with gastric resection always combined with systematic lymphadenectomy if no distant metastasis are found. The unpredictability of metastases, the importance of the retrograde lymphatic flow in the etiology of lymphatic metastases regardless of the location of the gastric tumor, suggest the real value of the enlarged lymphadenectomy cases when curative surgery is achievable.

Introduction

The assessment of the extrusive gastric resection and lymphadenectomy during surgery performed in gastric cancer pathology is controversial. It is well known that in the early stages of gastric cancer when the malignant process does not exceed the mucosa, the patient being in an ideal therapeutic stage the cancerous proliferation is already accompanied by neoplastic lymphatic embolism. This early lymphatic invasion brings forward the role of the morphology of the lymphatic system in the neoplastic dissemination and in the genesis of metastasis [1-6]. Surgeons believe that in the median, only one fifth of the patients with and without systematic lymphadenectomy had positive nodes whereas pathologists found almost three fourths of positive lymph nodes (72,7%) in patients with proximal

carcinoma of the stomach as compared to those without systematic lymphadenectomy (30,8%). The figures for middle and lower third carcinomas were even higher (63,5 vs 13,9% and 75,9 vs 27,1%) [7-10].

Gastric cancer is common throughout Europe. In 2000 there were 192.000 diagnoses with 158.000 deaths.

Despite advances in surgical therapy, and in neo or adjuvant chemo-radiotherapy the overall 5-year surgical rate remains poor about 20 per-cent compares with that of 70 per-cent achieved in Japan. Dutch and UK [1,2] trials have examined whether extended lymphadenectomy might prove as effective in western patients. The Dutch trial suggests a survival advantage in the D2 group,

particularly in splenectomy and pancreatectomy are avoided in the patients with prolonged follow-up, but in overall evolution in both trials there was little difference in the early postoperative evolution between western D1 and D2 lymphadenectomy. In an Italian randomized trial (3) the results were similar to those of the Japanese similar advantages for more radical D2 dissection when observed from Germany (4) and the UK (5) [11-16]. Improving the outcome for patients with gastric cancer must also concentrate on better understanding of tumor biology [17-23]. The histologic studies shown that the infiltration of the deepest layer of the mucosa were associated with lymph nodes metastasis from 0% to 12,8% [24-29]. In the presence of the submucosa invasion, the rate of lymph node metastasis is double compared with mucosal cancer infiltration.

In the early gastric carcinoma, only a diameter of the tumor more than 2 cm was an independent predictor of lymph metastasis in some publications [30-38]. The assessment on the extensive gastric resection and lymphadenectomy during surgery performed in gastric cancer pathology is not currently remains one of the specialist's concerns [39]. It is well known that in the early stage of gastric cancer, when the malignant process does not exceed the mucosa, the patient being in an ideal therapeutic stage the cancerous proliferation is already accompanied by neoplastic lymphatic embolies. This early lymphatic invasion brings forward the role of the morphology of the lymphatic system in the neoplastic dissemination and in the genesis of metastasis [40-48].

Surgeons believe that in the median only one fifth patients with and without systematic lymphadenectomy has positive nodes, whereas pathologists found almost three-fourth less of positive lymph nodes (72,7%) in patients with proximal carcinoma of the stomach as compared those without systematic lymphadenectomy (30,8%). The figures for middle and lower third carcinomas were even higher (63,5 vs 13,9% and 75,9 vs 27,1%) [7,8,49-52]. Positive lymph nodes in gastric carcinoma are most common in the peri gastric area and their distribution is clearly related to the site of tumor. In some studies, in patients with carcinoma of the proximal stomach the involved lymph nodes along with the hepatoduodenal ligament were in 9 to 9% and in 7 to 16% of patients with carcinoma of the distal part of the stomach [8,16,53-55]. The prognosis for gastric carcinoma after curative resection is correlated with the presence or absence of lymph node invasion(N+) and serosal invasion [3,56].

Shimodo et al. (cit.18) reported that the depth of invasion and lymph node metastasis correlates with early gastric cancer as follows: in gastric cancer within mucosal invasion and without ulcer, the patients have no lymph node metastasis, in presence of ulcer or invasion of submucosa (within 200 depth only in N1 groups are the metastases present and 5% of all submucosal cancers deeper than SM1 is the N2 metastasis present.

Accurate classification and staging allow the physician to determine a more accurate treatment, to evaluate the results of

management more reliably and compare worldwide statistics which are reported from various institutions and a local, regional and national basis more confidently [12,43].

The anatomical distribution of regional lymphnodes is determined by the Japanese Gastric Cancer Association, but the numbering (N1-16) and grouping (group 1-3) depends on the location and extension of tumors and is too complicated to be used routinely at community hospitals worldwide. Adachi et al publish a classification for lymph node metastasis: level I nodes (perigastric No 1-6), level II nodes (intermediate No 7-9), and level III nodes (distant No 10-16) respective of the tumor location. Adachi et al classified that not the anatomical level but the total number of positive nodes (1-6 vs >7) was an independent prognostic indicator for node positive gastric cancer. In several studies the number-based N(lymph-node) classification was superior to the classification based on the lymph nodes anatomical location [57-62].

Methods

The aim of the study is to present the results of research conducted by authors on the effects of gastric cancer on the lymphatic circulation of the organ the latter suffering secondary structural changes. Research has focused strictly on changes which occurred in gastric lymphatic system efferent to the topography of gastric tumor. The distribution of lymph node metastasis was histologically confirmed in 115 cases of gastric cancer in 35-year period (1980-2015). Statistical study of the distribution of perigastric adenopathy was completed with the dissection of 50 operative parts and with the performing of gastric lymphography with ultrafluid Lipiodal in 24 cases following SCHACHATS technique [1,2,63]. In view of studying the living human gastric lymphatic system, 100 intraoperative gastric lymphography's were performed using vital dye. This last chapter of the current study refers to the work of gastric lymphatics conducted by the authors; others segments of the study representing the theme of a different publication. Method: after performing the laparotomy blue dye dissolved in water (1% methylene blue) was injected in different points of the gastric wall, the dye injection being practiced in gastric segments which were to be resected. Before the operation we have an accept for the patients to perform lymphography and we have accepted from the ethics community of the Hospital.

In 30 cases the dye was patent blue dye 1% concentration. The dye was injected into the subserous layer of the gastric wall, 1,0-1,5 ml was injected in every place with a very fine needle (insulin needle), as the insertion of needle was conducted grazing the gastric wall. The maximum amount of dye use was 5-6 ml. The staining of the lymphatic network accured during a slow injection of dye on 1-10 minutes after injection or following the injection. The efferent lymphatic ways were injected with a rapid spread of the dye toward the lymphatic stations N1, N2 sometimes to stations N3. In most cases one could clearly see the lymphatic network design, indicating the directions of lymphatic

movement. In few cases however we have not achieved any results, as the ways had not been dyed, a situation in which we found no convincing exploration (technical error). With this method we performed intraoperative lymphography in 48 cases. One may mention that the injection of dye be used to perform a more precis intervention as it usually rendems a better images of lymph nodes by their colocation (Figure 1).



Figure 1: The intraoperative lymphatic staining in gastric cancer.

The injection of dye in the posterior wall was made after the Colo epiploic removal or after sectioning the duodenum which greatly allowed the visualization of the posterior gastric wall. The injection of the bottom region of the stomach was performed only in cases requiring total gastrectomy and in a case of superior polar esogastrectomy through thoracoabdominal way. The spreading of the dye was followed intraoperatively in areas of the stomach where gastric lymphatic ways were not interrupted. After a while the dye would soak into the nearby tissues and on the removed operative part typically were observed only blue spots. As a result, the intraoperative images are not suited for storage.

Results

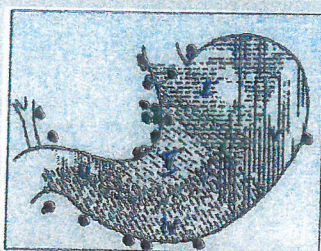


Figure 2: The 5 areas of the lymphatic channel in gastric wahl.

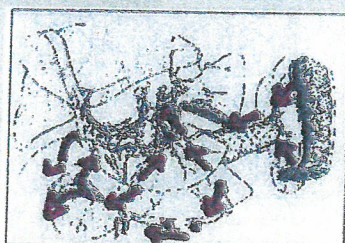


Figure 3: Efferent Channel of the lymph in gastric tumor.

On basis of 100 studied lymphographies the results allowed the following findings. The lymphatic of the vertical segment of the small gastric curvature form two systems (Figures 2 & 3).

The five lymphatic ways of the stomach: areas I cardial; areas II coronary of the smaller curvature; areas III pylori's; areas IV right gastroepiploic; areas V left gastroepiploic. The first lymphatic stations of the cardial zone (area I) are formed by paracardial nodes which efference can be bidirectional namely: on lymphatic path situated along the coronary to the celiac system and through Para esophagus nodes, to the mediastinum. The first lymphatic stations of the central segment of the smaller curvature (area II) are the parietal nodes of the gastric walls. The efferent branches flow into the nodes of the coronary and celiac artery. These findings show that in the areas I, II the lymphatic through anastomoses in two or three lymph node stations is without a strict delimitation.



Fig. 4 a)



Fig. 4 b)

Figure 4: lymphatic system of the stomach after Polya-Navraty.

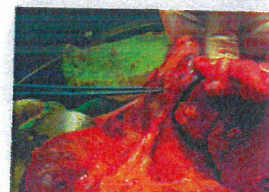
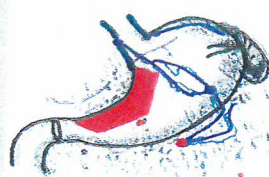
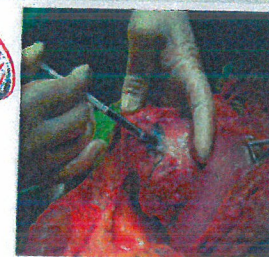
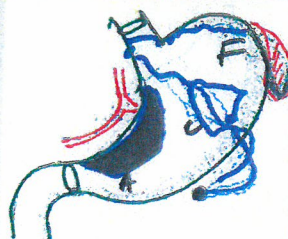
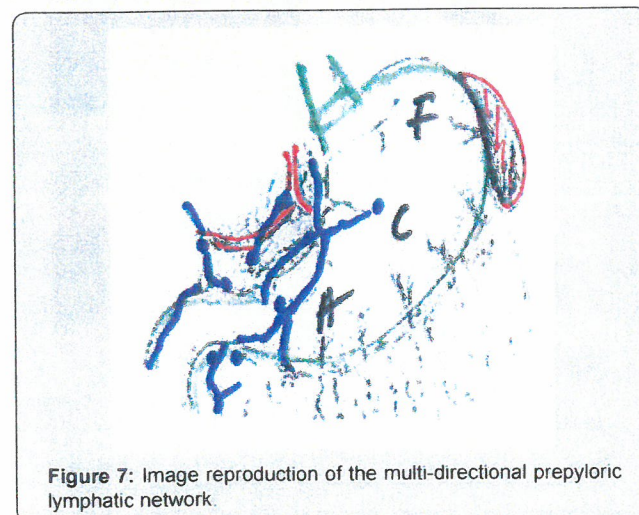
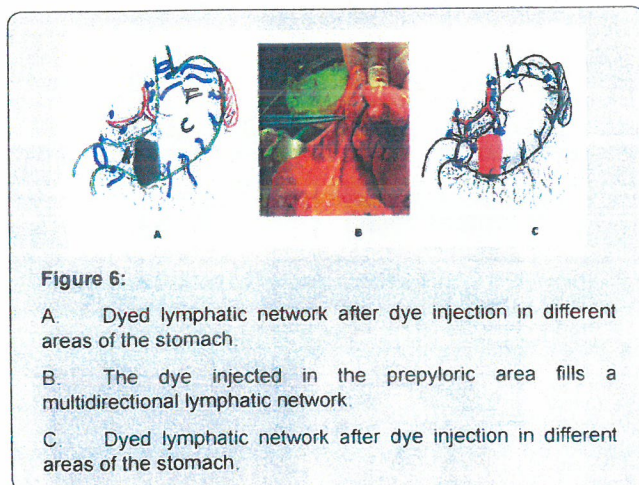


Figure 5:

- Bi-directional diffusion of the great injected dye in the gastric wall in the vicinity of the greater gastric curvature.
- The dye injected in vivo, shown the bidirectional diffuse of the dye in the neighbourhood of the greater curvature.
- Bi-directional diffusion of the great injected dye in the gastric wall in the vicinity of the greater gastric curvature.
- The dye injected into the fundic region near the greater gastric curvature often fills the lymphatic paths associated with paracardial nodes.

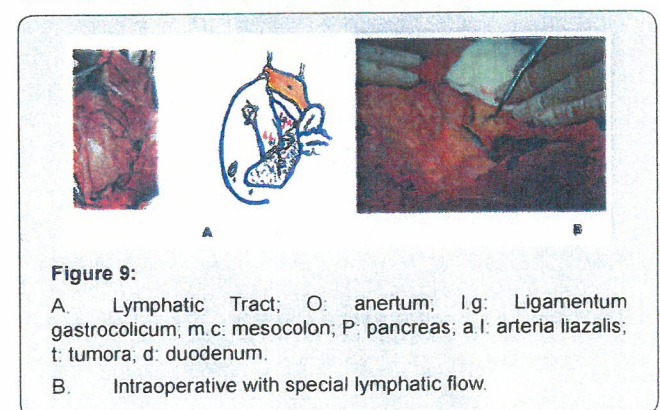
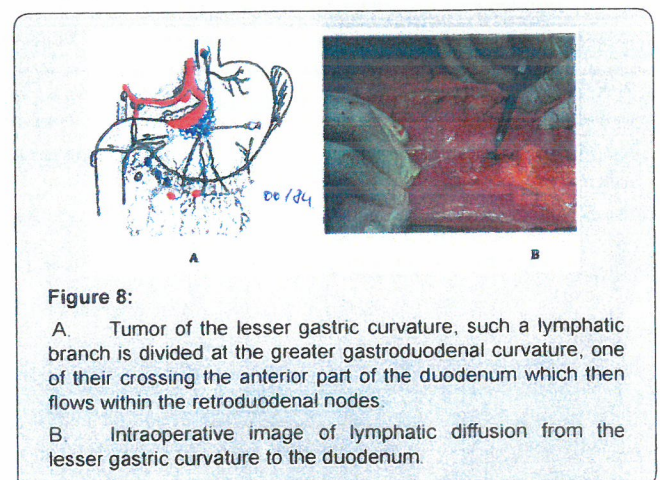
In the cardia and pylorus, the efferent lymphatic anastomoses are already in lymph node stations one. These findings confirm the practical validity of the classical descriptions of Rouviere and Caller (Figures 4a & 4b). The lymphatic network of the

gastric wall is characterized by multiple communications between different gastric territories, with bidirectional diffuse. The matter is emphasized in the image marked (1). The changes in the limited areas which may occur in some cases are shown in image nr(5a) shown the localization of the tumor (the real area of the tumor) (Figures 5a-5d). The dye injected into the fundic region near the greater gastric curvature often fills the lymphatic paths associated with paracardial nodes (Figures 6a-6c). Lymphatic network colored after the dye injected in different areas of the stomach. The dye injected in the prepyloric area fills a multidirectional lymphatic network. Figure 7 If injected in the presence of a tumor compressing the great curvature (red area) it distributes multidirectional in the efferent lymphatic paths.



Regarding the efferent lymphatic ways of some gastric areas, our observations show that the prepyloric segment of the lesser gastric curvature has the most lymphatic ways, one of these were on short way directly to the lymph node station of the liver hilum (Figures 7a & 7b). In this case we notice a lymphatic way that after reaching (page 8) the lesser curvature will lead retro duodenal. Other vessels are leading to the hepatoduodenal ligament all the way to the hepatic hilum. The majority of lymphatic vessels lead

toward upper pyloric vessels and celiac tru only in two cases have the lymphatic paths been fill which lead from the lesser curvature toward suprapancreatic nodes, following the retro pancreatic way by splenic hilum. Such lymphatic vessels have been described by JAMIESON-DOBSON. In one case of tumor of the lesser gastric curvature, such a lymphatic branch is divided at the greater gastroduodenal curvature, one of their crossing the anterior part of the duodenum which then flows within the retro duodenal nodes Figure 8. The dye which was injected near the tumor emphasizes the lymphatic network developed around the tumor. The arrows indicate the presence of a lymphatic with a known path. These lymphographic findings reinforce the clinical observations according to which in the presence of prepyloric tumor, the lymphatic dissemination is multidirectional. The poorest area of lymphatics the gastric "V" area, located in the medium and superior 1/3 of the greater curvature named "mute area" as in this particular area the incidence of malignant tumors is reduced the efferent lymphatic vessels of this area lead toward the splenic hilum which was demonstrated by RIO BRANCO.



In a case of our own, we notice the presence of an efference which was new to this territory. After administering the dy within the distal part of the gastric field V, a lymphatic network has been drawn in the dorsal part of the gastrocolic ligament to the colon, flowing in a paracolic node. After a peripancreatic

path its efferent branch has flow to the origin of the splenic artery. This observation demonstrates the existence of multiple variants in gastric lymphatic path (Figure 9). We have obtained beautiful images in limites plastica while injecting the dye in those areas where the tumor has not infiltrated the sub serosal area. In Figure 10, on can see the sub serosal network being filled with dye thus forming large vessels, only near the gastric curvatures.



Figure 10:

- A. Lymphatic filling in the plastic limit.
- B. IOP the lymphatic diffusion only near the gastric curvatures.



Figure 11: Lymphatic filling during the intervention for gastric ulcer.

In the tumor involves the serosa, the lymphatics became thrombosed and will develop new paths the latter bypassing the tumor, which will then pour in the neighboring nodes on the same curvature (Figure 11). The lymphatic pathways which go to the small curvature elide the tumor. We have often observed that in tumors the lymphatic circulation is reversed with the lymphatic spread to the across curvature, retrograde lymphatic flow, something we have not seen in a normal stomach. Moreover, any attempt of manual compression, of the region has caused the breakage of lymphatics without the removal of the dye itself. In many of the studied groups, we have noticed on which was caused the diversion of circulation metastases located in lymph nodes are along the lymphatics. The tumoral tissue destroys intraglandular capillary network. While there is lymphatic tissue along the tissue, the lymphatic circulation is not stopped in the node however, the dye only marks the healthy area. This shows a completely invaded lymph node will change the direction of the lymphatic flow. This formulation is an agreement with a finding in our case with central tumor after which injecting the dye in the peritumoral area, the lymphatic filling was noticed in a lymphatic vessel along the great gastric curvature which

was interrupted in the vicinity of a metastatic node , deviating toward the small curvature of the duodenum (Figure 12).



Figure 12:

- A. Lymphatic filling. Tumoral metastasis deviates lymphatic circulation.
- B. The tumoral metastasis deviating the duodenum.



Figure 13:

- A. Lymphatic filling in case of prepyloric tumor. Tumor metastasis determines the appearance of retrograde lymphatic flow.
- B. The retrograde lymphatic diffusion in prepyloric tumor.

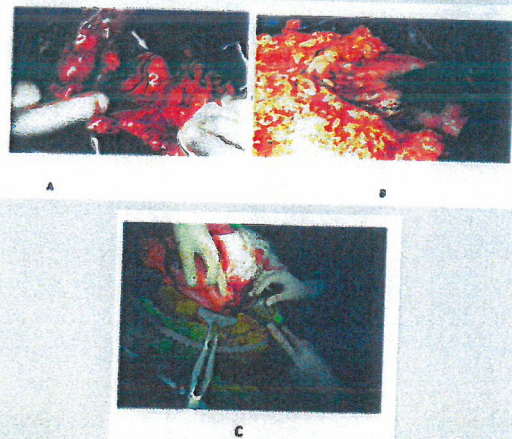


Figure 14:

- A. Dye injection in the greater curvature 1-stomach 2-Pancreas.
- B. Dye injection at the junction of the greater curvature with long tuberosity.
- C. Particular aspect in a case of antral cancer (pT2) with efferent lymphatic path was toward the hepatic hilum after injecting the dye.



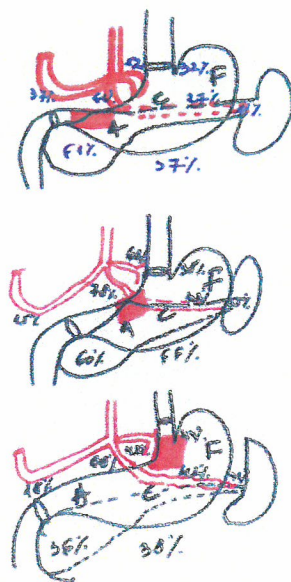
Figure 15: Dye injection at the junction of the greater curvature with long tuberosity.



Figure 16: Lymphatic channel and gastrocolic ligament.



Figure 17: The dye diffusion on the small and great gastric curvature.



F: Fundus; C: Corpus; A: Antrum

Figure 18: The proportion of gastric tumor metastases independent of tumor location.

The different case (Figure 13) showing a circular prepyloric tumor the injection of dye near the duodenal edge was followed by the staining of lymphatics, which shead within the sub pyloric nodes as the lymphatic flow was followed by retrograde direction the great gastric curvature. The last two observations mentioned above reinforces Nishimura's observation creating a prerequisite for metastatic invasion. The gastric lymphatic system as well as the possibility of the retrograde lymphatic circulation in the tumoral pathology allows the evolution lymphatic metastasis in any tumor territory. In some cases, we have noted the presence of distant metastasis, given that the peritumoral nodes were (N-) histological. These metastases we have considered as "skip metastases" (Figure 14). We have noticed a particular aspect in a case of antral cancer(pT2) with efferent lymphatic path was toward the hepatic hilum after injecting the dye. Is it a short way to the direct dissemination in 9th station? (Figures 15-18).

Discussion

The results obtained through applied in the study of tumoral gastric lymphatic circulation allow few comments (Figure 18). In papillary tumors, the lymphatic metastasis was predominant in the celiac and subpyloric group, as well as in the splenic hilum in 11% of cases. These findings reinforce the importance of retrograde circulation in tumoral gastric surgery [3-5,37,64-70]. We have found 36% of cases with tumor of the cardia, the presence of subpyloric lymph node metastasis and in 45% lymphatic metastasis in the splenic hilum which highlight the importance of retrograde lymphatic flow in loco regional metastasis [29,71]. In the presence of medio gastric tumors, the metastasis was multidirectional including all curvatures, splenic hilum and retro pancreatic current which shows the existence of a multidimensional continuation in malignant lymphatic dissemination through lymphatic ways which are efferent to the tumor.

Despite the undeniable [31] existence of lymphatic anastomosis histopathological distinguished, the pylorus is a serious barrier against lymph progression. In over 85% of our cases, the prepyloric injection of dye in the direction of the duodenum has revealed the formation of a ring that stretches over marginal supra and subpyloric area, representing a true barrier. Considering the results, we have obtained Figures 2 & 3 as well as the classic anatomic data Figures 4a & 4b three territories with gastric lymphatic drainage have been confirmed, with clinical significance in tumoral pathology.

- The coronary territory, described by Rouvier which covers the entire surface of the lesser curvature, comprising the upper two thirds of the horizontal portion of the stomach.
- Rouviere's hepatic territory stretched throughout the great curvature and the horizontal part of the lesser curvature, the angle and lower vertical portion of the lesser curvature.

c. The splenic territory which comprises two left thirds of the great tuberosity and the first two inches of the middle portion of the greater gastric curvature.

This scheme regarding drainage is valid for the study resection pieces as in the living man, is suffers numerous readjustments, primarily due the dynamics of lymphatics digestive viscera which is linked to peristaltis and the presence of lymphatic valves which direct the lymphatic flow in different areas. This explains the situation which we observed on presence of "paradox" metastases a synchronous multicentric lymphatic dissemination.

In the light of the above observation one can divide each gastric face in the proximity of the lesser curvature and a median strip. The lymphatic located in one of the expense areas, are conducted corresponding curvature through the movement of the valves as subserous collaterals are in continuity from one stomach curvature to another only the lymphatic vessels before the curvature have valves. The above analysis has been deduced from in vivo aspects of intraoperative lymphography. The lymphography's which were performed on resection parts with lipoidal dye to the lock of peristaltic, the lymphatic valves were in a few cases forced [63] by injection counter. The aspect detected during the lymphography performed intraoperatively, may explain the presence of lymph node metastasis located on the curvature opposite to the neoplasm. This is explained by the fact that the hyper pressure down streaming causes the cancerous cells to be showed and blocked from streaming to the intermediate evaluated area. These areas are caught in the lymphatic station through valuate collectors which will head the lymph in different directions where the lymphatic paths are not blocked by malignant cells and still function physiologically.

As opposed to the schema of classic lymph drainage of the stomach, which were established through the studies of corpses the in vivo gastric lymphatic drainage is partially changed by the mandatarly presence of intermediate areas, which are interposed between the three known classical areas so that the coronary and splenic territory may include the intermediate areas [6-8,11-13]. Of course, the drainage of tumoral cells may spread in every direction as shown in the results of the in vivo lymphography [64-66,71,72]. There is however a preferential drainage heading to the classic node group. Znniser et al. [73,66,74,54] in a study regarding the evaluation of the spread in the gastric wall has found a wide variation in it extend. The tumor spread can be observed through the intramural lymphatic sor in the sub serosal layers, with local extension intra the esophagus or the duodenum [3,7,25,30,31,73,75,76].

In the present study, we have observed that the extension into the duodenum was in the majority of cases through the muscular layer with direct infiltration of the lymphatics channel, and through the lymphatics from the serosa. In all observed cases the extension into the duodenum was generally with a limited extent.

In the proximal gastric tumors, the in vivo blue dye showed the diffusion of the dye into the esophagus wall, were in the majority of cases through the submucous lymphatic channels. In the present study, the stained nodes were most common in the perigastric area and their distribution was clearly related to the site of the tumor. This observation is similar with other studies [3,25,26,30,31,61,74,77-80].

Frequently however the lymph node stations were involved for from the primary, that is along the hepatoduodenal ligament, in 5-19% of patients with proximal carcinoma, and in 6-16% of patients with carcinoma, and 6-16% of patients with carcinoma of the distal part of the stomach [2,5,17,18,30,31,73]. The present study confirms the results as published by Keller et al. However insufficient clearance of micro metastasis deposits within regional lymphatic vessels and surrounding tissue seems to be the main cause of the stomach [18,19,67,80-85]. We found it interesting to follow the distribution of lymphatics from the juxta parietal nodes and establish appreciate regrouping its collectors. One could notice a halving of the hepatic lymphatic chain and drainage to be collectors from a relay in gastric coronary nodes and the importance of the posterior gastric artery which sustains the splenic node chain [1,4,24,25,31,32,63,86].

The prognostic significance of lymph node dissection in the gastric carcinoma remain controversial, but some studies suggested that the extend of lymph node dissection (D1, D2 or D3) is an important factor associated with the early or late recurrence [87-92]. Lymph node metastasis decisively affects prognosis in gastric carcinoma, and the operative clearance of the lymphatics is importance and requires a thorough surgical training if it is to be done effectively and safely [93-97].

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Sentinel lymph node identification in colorectal cancer with in vivo mapping technique: rationale and development. Personal experience and literature review

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Abstract

Top

Background: Prognostic factors for colorectal carcinomas (CRC) must be detected to improve treatment. Metastatic spread to the draining lymph nodes (LN) is one of the most important prognostic factors for patients with CRC.

The purpose of this study was to determine with in vivo blue dye injection technique the sentinel lymph node (SLN) and the sentinel lymph node mapping (SLNM).

Methods: 140 patients who underwent curative resection for CRC were enrolled. We used for SLNs intraoperative identification the subserosal blue dye injection in vivo. All identified LNs were stained and examined by conventional hematoxylin and eosin method.

Results: After in vivo injection, all SLNs were examined by pathology. The median number of SLNs was 42 with in vivo injection. The detection rate of SLNs within location and that lymphatic drainage can be unpredictable at times underscore the importance of lymphatic mapping to precisely locate the sentinel node. The SLN identification rate with the blue dye was 81%, with 8, 5% false negative rate, and 15, 3 upstaging rate.

Conclusion: The SLNs with in vivo blue dye subserosal injection is accurate in CRC. The SLN is sat uniformly peritumoral in location. The course of false negative SLNs (8, 5%) is a major issue to resolve before routinely using this technique in CRC management. **Keywords:** sentinel lymph node; In vivo lymphography; Colon carcinoma

Introduction

In 1892 Herbert Snow noted that "the danger lies in the diffusion of malignant cells. These always implicate the nearest lymph glands... Palpable enlargement of these glands is, unfortunately, but a late symptom of deposits. We see the importance of securing the perfect eradication of these lymph glands."

In 1977 Cabanas reported a novel approach to staging carcinoma of the penis. Martin (1993) studied the blue stained node in melanoma, characterized as the "sentinel lymph node", as this lymph node was stained with injection of Isosulfan blue [1-3].

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Online

The most prognostic factor for predicting survival in CRC is the stage of the tumor during initial diagnosis, even though surgery alone is considered curative in most patients' cases. With the disease confined within the bowel wall (AJCC stage I/II), the survival decreases significantly by about 25-30%, once the disease spreads beyond the bowel wall to draining lymph nodes (AJCC stage III).

Therefore, any diagnosis accuracy of nodal metastasis remains critical for proper prediction of survival and appropriate therapeutic planning. About 10-25% of patients considered to have localized disease (AJCC stage I/II) will develop progression of the disease within five years.

This systematic failure may be multifactorial, but many of these patients indeed had occult metastasis, which remained undetected by conventional pathologic examination [4-7].

Various methods have been developed to increase the incidence of detection of such nodal micrometastases, and most recently by reverse transcriptase polymerase chain reaction (RT-PCR) [8]. All of these methods have increased the rate of detection of lymph nodes metastases in colorectal cancer, but with an enormous burden to the pathologist in terms of time, cost and labor work. In this condition, sentinel lymph nodes (SLNs) mapping technique seems to be an ideal alternative for the accurate staging of patient's with colorectal cancer.

Since the 1990's this technique has been used for accurate staging of nodal metastasis in multiple solid tumors, including breast, [9-11] head and neck, thyroid, gastrointestinal, gynecological [12], lung [13] and colorectal cancer [14, 15].

The SLN is defined as the first to fourth node having direct drainage from the primary tumor site, and has the highest potential of harboring micrometastases when present [16].

If the SLNs can be identified during colorectal cancer surgery, these nodes can be specially tested by the pathologist for a detailed analysis by multilevel micro sections, IHC, and RT-PCR methods [17].

Materials

From January 2004 through December 2014, 140 consecutive patients with diagnosis of colorectal cancer, preoperatively N0 were prospectively studied with in vivo and ex vivo method for SLN detection. Preoperatively evaluation for all patients included a complete history and physical examination, routinely laboratory studies, including liver function study and carcinoembryonic antigen (CEA), colonoscopy and CT of the abdomen and pelvis.

In all patient's, an exploratory laparotomy was performed to find the extend of the primary tumor and any distinct metastases. For selective SLN mapping in colorectal cancer, the question is: how do we do it?

Some mobilization of the bowel along with the paracolic gutter was needed to deliver the bowel adjoining the tumor, near the surface. Metastatic dissection was kept at a minimum to prevent disruption of the lymphatic pathway.

Method

Once the tumor bearing area of the colon was isolated, 1-2 ml of patient Methylene blue dye 1% was injected subserosal by a tuberculin syringe, around the primary tumor in 4-th quadrants, in a circumferential manner (Figure 1).

Methylene blue dye 1%, injected subserosal by a tuberculin syringe around the primary tumor in 4-th quadrants, in a circumferential manner (Figure 1).

Patient blue dye 1% is being injected subserosally around a tumor in the sigmoid colon of a 70 year female, and the mesentery was injected visually, to determine the SLNs, which were identified by uptake of the blue dye within the first 10 minutes of injection (Figure 2).

Care was taken not to inject into the lumen of the colon or rectum bowel. In low rectal cancer we use for subserosal transanal injection with a spinal needle. The blue dye travels quickly from the lymphatic channels to the draining lymphatic nodes. The SLNs are usually identified within the first five to seven minutes following the injection. The blue dye travels quickly from the lymphatic channels to the draining lymphatic nodes. After identification of the SLN we used two techniques: first was to mark with suture for future identification (Figure 3).



identification of the SLNs, a bloc resection of carcinomas with lymphadenectomy was performed in the standard fashion, regardless of results of SLN mapping. Occasionally a blue node is identified outside of the usual lymphatic bearing area. This lymph node is considered as an SLN and included within the margins of the resection. This situation we have in one patient with transverse colon carcinoma, with identification of the "skip" dissemination in retrocecal areas of SLN (Figures 5-7).

Other unusual situation is represented by the presence of

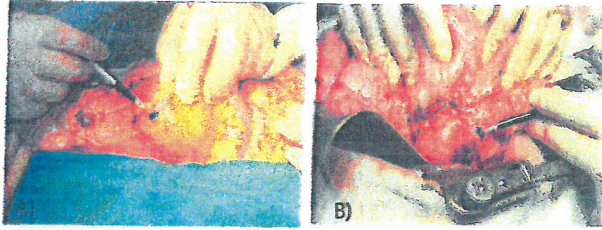


Figure 1: Methylene blue dye 1%, injected subserosal by a tuberculin syringe around the primary tumor in 4-th quadrants, in a circumferential manner.

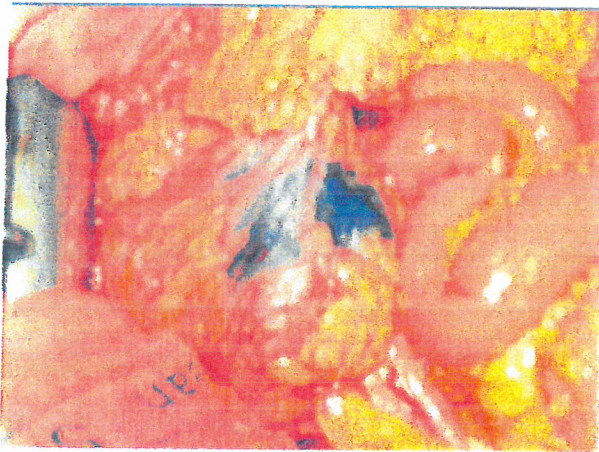


Figure 2: Patient blue dye 1% is being injected subserosally and the mesentery was injected visually.

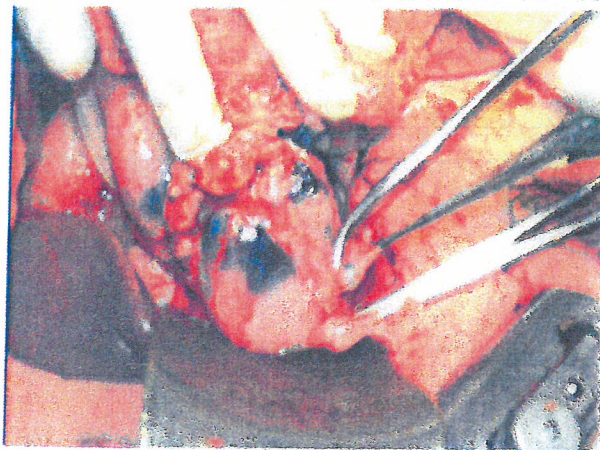


Figure 3: Lymphatic mapping of the colon cancer demonstrating a blue stained lymphatic channel and sentinel node.



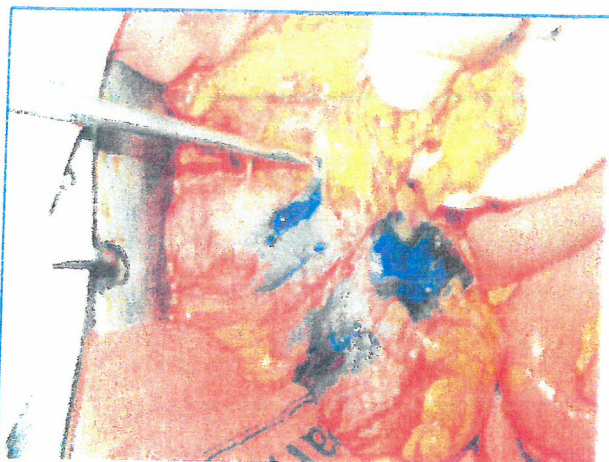


Figure 4: After identification of the SLN we used two techniques: first was to marked with suture for future identification.

fatty mesentery, required by the limited surgical dissection of the mesentery fat, to identify the stained LNs. For this clinical study we have to get approval from ethical commission and from the patients.

Pathological Examination

The surgical specimens were sent to the pathology in a fresh state, and each stained LN was considered as an SLN, thus being



Figure 5: The marked SLN.



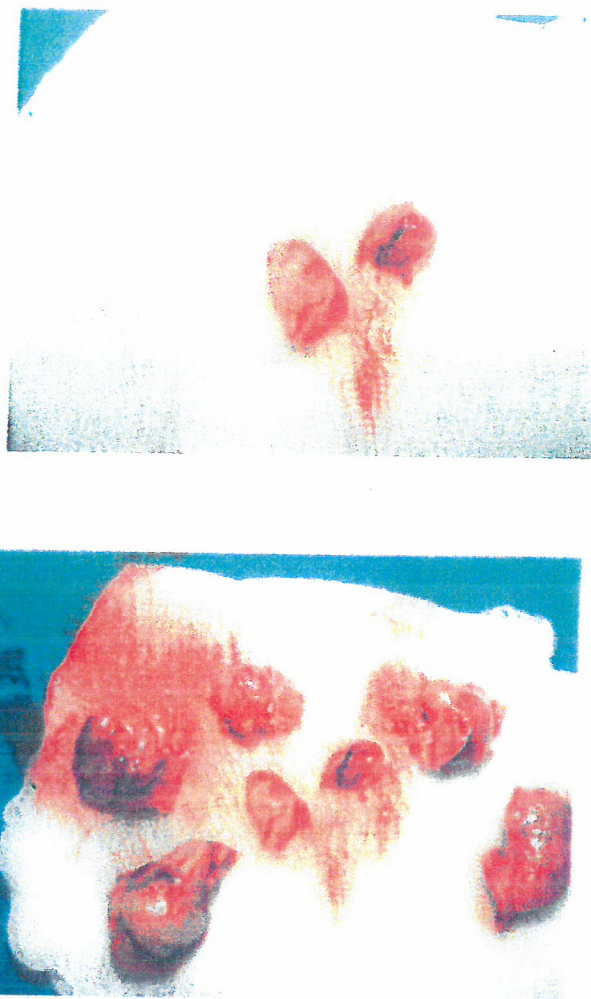


Figure 6: The resected—mapping SLN.

part. The demographic features, tumor location, tumor stage, site of the tumor and histology are shown in Table 1. The result obtained with in vivo SLNs mapping are shown in Table 2.

The SLN identification rates were 81% with the in vivo injection, with accuracy in 87% of cases. Of the 72 tumors with positive SLNs, in 26 cases (36, 1%) the SLNs were the only sites of metastasis and 4 patients (15, 3%) were upstaged.

False negative SLN mapping were detected in 12 cases, these cases were located in the right colon, and upper rectum, and all negative cases had a tumor size greater than p T3 (Table 3).

All but 2 of the 12 false negative cases had a tumor greater than 5, 0 cm, and greater than pT3. We observed in 14 patients a failure in the detection of the SLN, 4 of which were directly associated with technical trouble.

None of the patients presented an adverse reaction associated with intraoperative methylene blue dye injection.

Discussion

In our analysis, the global sensibility of SLNM was 77%, with 87% accuracy. SLNM is not currently approved for the treatment of colon cancer, but is tested in clinical trials.

For colorectal cancer we needed to evaluate the extrusion



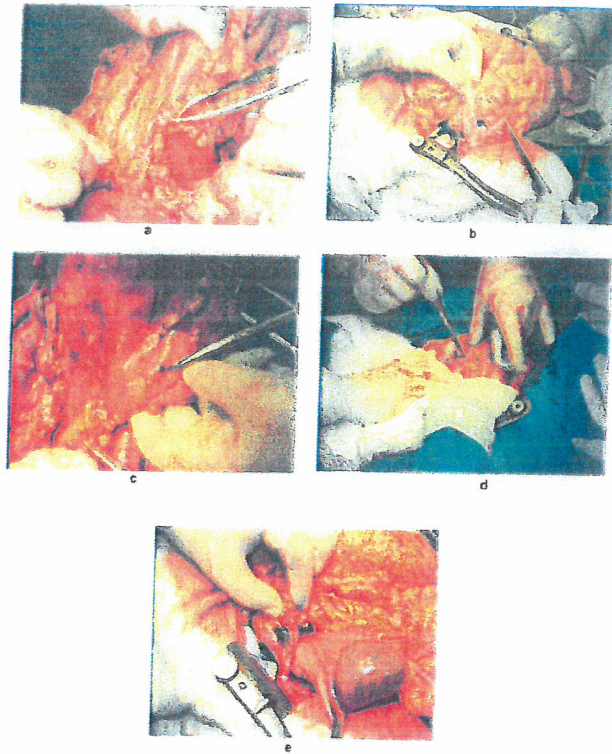


Figure 7: Retrocecal "skip" metastasis with SLN in transverse colon carcinoma. a: colon transverse carcinoma, b,e: skip metastasis around the caecum, c: SLN and the mesocolon, d: SLN identification in the right mesocolon

Table 1: Characteristic of patients: N=140.

Characteristics	Patients with in vivo	P value
Age	62 (10, 1)	0, 256
Serum CEA (mg/ml)	5, 9 (14, 0)	0, 78
Tumor size	4, 2 (1, 6)	0, 64
Primary tumor site:		0, 52
Right colon	47	
Transverse colon	13	
Left colon	10	
Sigmoid colon	46	
Rectum	24	
T stage:		0, 190
T1	10	
T2	30	
T3	100	
Nr. of patients	140	
AJCC stage:		0, 952
I/II	62	
III	78	
Pathology:		0, 35
Well differentiated	40	
Moderate differentiated	95	
Undifferentiated	5	

Table 2: Results of SLN identification and mapping with in vivo injection technique.

Technique	Detection rate	Nr. of SLNs	Accuracy	Sensibility	False (-) note	Upstaging
In vivo	114/140 (81%)	2, 3+0, 8	120/140 (87%)	107/140 (77%)	12/140 (8, 5%)	4/26 (15, 4%)



Table 3: 12 Cases with false-negative SLN mapping.

Cases	Nr. of SLN	TNM stage	Lymphatic vascular invasion	Location	Tumor size (cm)	Histology (differentiated)
1	2	T3N2M0	+/+	Cecum	5, 5	Moderate
2	1	T3N1M0	+/+	Cecum	5, 2	Moderate
3	1	T3N1M0	-/-	Acendent Colon	6, 0	Undifferentiated
4	2	T3N2M0	-/+	Flexura Coli Hepatis	5, 6	Undifferentiated
5	3	T3N1M0	+/-	Sigmoid	5	Moderate
6	2	T3N1M0	+/-	Descendent Colon	5, 6	Moderate
7	3	T2N1M0	+/+	Upper Rectum	3, 6	Moderate
8	2	T3N1M0	+/+	Upper Rectum	6, 5	Moderate
9	2	T3N2M0	+/+	Colon Transvers	5, 6	Moderate
10	2	T3N1M0	+/+	Ascendant Colon	5, 4	Undifferentiated
11	2	T3N1M0	+/+	Descendent Colon	5, 2	Moderate
12	3	T3N1M0	+/-	Sigmoid	5, 2	Moderate

of the disease more precisely. It's not acceptable to miss value extrusion because there is no other prognostic factor that should be used to justify the adjuvant treatment our analysis showed an 8.5% median risk of false-negative results. If we consider all studies published on breast cancer (65%), where SLN has been extensively studied, we have the same 8.4% (0-29%) false negative rate [18].

In breast cancer SLNM is proposed for T1-T2 tumors [19]. In the series of CRC(s) we often found more than half of the patients with T3-T4 tumors [20–24].

In CRC(s) we are shown that a massive lymph node involvement was the cause of the high false – negative rate of SLNM, similar observations were published from others too [25].

Thus, for future studies of CRC it will be necessary to stratify patients according to their T stage.

Elsewhere, a large study [26] found a higher success rate of SLNM for colon cancer versus rectal cancer, but nodal upstaging, skip metastases and occult metastases were similar to the two sites.

For trials that included more than 100 patients, the false – negative rate was 6.7% versus 9.0% for trials including fewer than 100 patients. In the present study with 140 colon and rectal carcinoma the false – negative rate was 8.3%.

This technique seems operator dependent, and a learning curve is probably necessary to obtain good results for SLNM. A study by Paramo et al detailed the number of cases (eight) required to be sure to obtain reproducible results for CRC [20,21].

No standardization exist concerning the most optimal technique for SLNM, previous studies with visible dye and lymphoscintigraphy with in vivo or ex vivo setting, reported different times of mapping, variable injection sites (subserosal, submucosal, or peritumoral) and variable a both definitions of upstaging [27-34].

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In another multicenter study the surgeons performed of blue dye with a 47-54% false – negative rate [26,33], in contrast with the results of experienced surgeons in more than 20-30 cases [15,33,35].

Data on SLNM in rectal cancer are limited and several studies have shown that SLN detection in rectal cancer is unreliable [31], the applicability of SLN procedure is highly limited due to the narrow space around the bulky mesentery, infraperitoneal location, and complex lymphatic drainage. In infraperitoneal rectum carcinoma we use the endoanal subserosal injection in the tumor site. Because we have a limited experience with transanal injection of the blue dye, in the current study we adopted narrow indication of rectal cancer patients, and only the cases of the upper rectum which located above the peritoneal reflection were eligible to this study.

Isosulfan blue is the popular choice for lymphatic mapping in CRC, the methylene blue dye is efficacious too and cost effective as an alternative to isosulfan blue dye [36-43].

With CRC, according to the UICC recommendations, a minimum of 15 lymph nodes is adequate for accurate PM staging [44]. Joseph et al noted that the more lymph nodes that were sampled, the greater was the number of patients upstaging. For T1-2 lesions, more than 18 LN(s) must be found [45]. Certainly the number of lymph nodes that should be examined is crucial to a proper diagnosis. The meta analysis published from Gaetan et al. [46] have considered that conventional examination of selected lymph nodes in a CRC specimen is less informative than for used examination of SLNs identified during SLNM.

In fact the median rate of patients (9%) who were upstaged could justify a focused SLN examination. In present study we have 15.3% upstaging with in vivo SLNM.

Presentation of the false – negative SLN data varies in the literature [46-50]. The varying definition of SLN positivity is a major reason for the large discrepancy in reported false – negative rates [51,52].

The extension of the disease contributes to false – negative SLN staging as well. Tumor replaced lymph nodes, those with extra nodal disease extrusion, and nodes directly invaded by tumor are unlikely to stain blue after peritumoral subserosal injection of blue dye, because of lymphatic channel obstruction by tumor [49,53,54].

In tumors located in the rectum, particularly inaccessible cancers located extra peritoneally or those treated with preoperative radiation, are associated with high false – negative results [50,53]. In the in vivo SLNM for rectal cancer, to identify the blue node, must disrupting the mesentery specimen postoperatively. As such rectal cancers have represented only 13% of studies evaluating lymphatic mapping for CRC [55].

A recent prospective multicenter trial demonstrated that detection rates with sensitivity were significantly influenced by patient, and disease specific factors [56]. In the present study we have 12 cases with false – negative results, and the majority of these were advanced carcinomas with T3 tumor and large (>5 cm), suggesting that the large, and more than T2 tumors may alter the lymphatic channels and obstruct a duct by tumor cells or deposits.

For this reason an guideline for the SLNM procedure would be important to reduce false – negative rates [57-67].

For this study we have a patient accept and the accept from the ethics commission of the Emergency Academic Hospital.

Conclusion

The present study indicated that SLNM with in vivo method is accurate in CRC. Based on the results of the present study on the use of SLNM in CRC patients should use blue dye for reasons of simplicity, be performed by experienced surgeons and pathologists.

The SLN is sat in uniformly peritumoral in location and that lymphatic drainage can be unpredictable at times, underscore the importance of lymphatic mapping to precisely locate the SLN.



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APORTUL PERSONAL IN PREGATIREA PROFESIONALA A MEDICILOR REZIDENTI SI DOCTORANZI IN CADRUL SPITALULUI CLINIC JUDETEAN DE URGENTA SIBIU

Dupa obtinerea titlului de profesor universitar, in 2006, am fost desemnat de MSF coordonator in pregatirea medicilor rezidenti in specialitatea de chirurgie generala si medicina de urgenta, precum si in pregatirea stagiului de chirurgie de urgenta .

Din 2007 prin obtinerea celei de a doua specialitate in chirurgia toracica, asociata cu absolvirea unui curs de 4 luni de chirurgie cardiologica in 1981 la Clinica de Chirurgie Cardio-Vasculara Fundeni, am fost desemnat coordonator si pentru stagiile de pregatire in chirurgie toracica a medicilor rezidenti.

In 2011 am infintat Centrul de microchirurgie si chirurgie experimentală in cadrul ULBS, Spitalul Clinic Sibiu, prin ordinul rectorului ULBS, fiind desemnat directorul centrului prin decizia rectorului ULBS.

In cadrul centrului de cercetare am organizat in 2015 un workshop national cu participare internationala in colaborare cu UMF Tg.Mures, UMF Cluj Napoca, tema fiind cancerul gastric.

Din 2015 Centrul a fost transformat in baza de training in chirurgie clasica generala,toracica si laparoscopica (discheta atasata).In baza se desfasoara pregatirea teoretica si practica a medicilor rezidenti pe organe recoltate de la animale sacrificate, precum si studiile practice ale doctorilor. Baza de training este coordonata de directorul bazei prin persoana mea.

Dupa obtinerea titlului de profesor universitar in 2003 am fost cooptat in comisii profesionale pentru examenele de promovare in functiile didactice de conferentiar, profesor universitar la UMF Tg.Mures, UMF Cluj Napoca, UMF Craiova, UMF Carol Davila Bucuresti.De asemenea din 2006 sunt coordonator de doctorate in medicina si referent in zeci de comisii nationale cu participare internationala ca referent, in obtinerea titlului de doctor in medicina, a unor

doctori de la UMF Tg.Mures, UMF Cluj Napoca, UMF Craiova, UMF Carol Davila Bucuresti. In prezent coordonez activitatea de pregatire doctorala pentru 12 candidati inscrisi.

Activitatea chirurgicala

Din perioada specializarii in specialitatea chirurgie in cadrul UMF Tg.Mures am inceput activitatea chirurgicala. Perfectionarea in continuare am efectuat-o in calitate de medic secundar la UM Cluj, IO Cluj Napoca, Institutul Fundeni.

Din 1985 in calitate de medic sef sectie la Spitalul de Urgenta din Petrosani , am coordonat activitatea profesionala a colectivului de chirurghi din sectia de chirurgie de urgenta, efectuand un numar mare de interventii chirurgicale in patologia de urgenta abdominala, toracica, cardio-vasculara(10 plagi cardiace operate), politrauma si arsi. Activitatea profesionala a fost mare prin existenta zecilor de mine de carbune cu 70000 de angajati in industria extractiva.

Intreaga experienta a fost publicata in zeci de lucrari stiintifice nationale si internationale. Activitatea chirurgicala cu experienta acumulata in 46 de ani de practica chirurgicala, a fost si este publicata in numeroase publicatii din tara si strainatate , prezentate in CV, fiind redactate si 18 volume de chirurgie, toate acestea fiind depuse si la biblioteca ULBS.

Din 2001 am continuat activitatea profesionala la S.C.J.U.Sibiu, in clinica Chirurgie I, devenind prin numire ministeriala sef de sectie din anul 2003.

In intervalul 2001-2018, am abordat toata chirurgia de urgenta toraco-vasculara-abdominala, chirurgia oncologica, chirurgia tumora benigna si maligna. Din anul 2006 am introdus in sectie VATS(videotoracosopia asistata). Din anul 2001 am introdus in clinica interventiile cu plasa sistolica pentru hernii+tehnica abdomenului deschis cu damagecontrol in peritonita. Dupa anul 2004 am introdus in clinica anastomozele mecanice in chirurgia digestiva. Toate aceste tehnici noi, inclusiv suturile vasculare si pulmonare, le-am transmis medicilor din sectie si rezidentilor, prin baza de training unde se efectueaza pregatirea practica continua a medicilor rezidenti.

Aportul personal in cresterea prestigiului scolii de medicina romaneasca

Incepand cu anul 1970 am efectuat cercetare experimentală pe iepuri, sobolani albi, in cadrul laboratorului de anatomie si al bazei experimentale din Tg. Mures sub conducerea domnului doctor Csiky Miklos. Studiul de cercetare extins si la pacienti a constatat in evaluarea malabsorbtiei proteice dupa gastrectomie totala la animale si oameni prin metoda RISA-MAA. Rezultatele cercetarii au stat la baza temei de doctorat si a unei monografii editate. Acest model experimental nu a fost gasit in literatura de specialitate fiind considerat o importanta contributie la studiul malabsorbtiei pe plan international.

In anul 1991 am absolvit cursul international AO International in Salzburg devenind bursier al AO International trei ani la universitatea din Zurich.

Pregatirea practica cu schimbare de experienta avuta anual pana in 2017 la nivelul Spitalului Clinic Triemli (Prof. Dr. Metzger Urs, Prof. Dr. Weber Markus, Prof. Dr. Trentz) au permis insusirea celor mai noi tehnici in chirurgia generala, oncologica, toracica, cunostinte pe care le-am aplicat in cadrul clinicii pe care am coordonat-o.

Incepand cu anul 2003 am fost invitat sistematic in centrul universitar din Zurich, Graz, Institutul Oncologic Budapesta (Prof. Dr. Besznyak Gyorgy) in calitate de visiting profesor avand ocazia sa prezint prin prezentare orala activitatea scolii noastre de chirurgie si strangerea relatiilor profesionale cu acestecoli de reputatie cunoscuta.

In anul 2007 am absolvit cursul de Master in colorectal surgery la Paris prin covidion, experienta acumulata cu anastomozele mecanice laparoscopice permitand sa instruiesc medicii clinicii in aplicarea staplerelor in chirurgia digestiva. Pentru cresterea calitatii asistentei in urgent prin folosirea laparoscopului, am participat in anul 2014 in calitate de invitat la cursul international de chirurgie de urgenta vinerala, din Universitatea de Medicina Graz, curs acreditat de Consiliul European.

In anul 2017 am efectuat stagiul de visiting profesor la Universitatea din Zurich, Clinica Triemli, fiind invitat din nou pentru un stagiul in anul 2019, ceea ce va permite aducerea ultimelor noutati terapeutice in Clinica noastra si strangerea relatiilor internationale cu institutii medicale de prestigiu din strainatate.

Din anul 1978 am inceput sa efectuez limfografii in vivo, exvivo, in cancerele gastrice cu colorant, cu acceptul pacientilor, fiind primele studii de acest fel pe plan national si international. Rezultatele obtinute au fost publicate si comunicate.

Din anul 2004 am inceput sa studiez in premiera pe tara (fiind printre putinele centre din lume) determinarea NLS (nodulului limfatic santinela) cu injectare de colorant in cancerul gastric, colo-rectal. Aceasta metoda a fost publicata prima data in literatura in anul 2000. Dupa un numar de peste 170 de determinari rezultatele obtinute au fost publicate in strainatate si in tara reprezentand o contributie romaneasca importanta in practica terapiei oncologice din patologia digestiva. In prezent tehnica se va extinde la patologia esofagiana toracica, cu care inca nu avem experienta. Am fost membru fondator si vicepresedinte al Societatii Romane de Chirurgie de Urgenta si Trauma in perioada presedintiei profesorului universitar Dr. Nica Constantin si reprezentant al Societatii pentru activitatea ei pe teritoriul Ardealului, continuand si in prezent activitatea in societate. In cadrul societatii am participat la elaborarea Ghidului National de Urgenta aprobat de catre Ministerul Sanatatii in anul 2017.

In anul 2018 – Factor de impact :1952 “Executive Functioning and Quality of Life in Acromegaly”. Psychology Research and Behavior Management s-a publicat in ianuarie 2019. Autori: Emilia Solomon, Dumitru Branisteanu, Andrei Dumbrava, Radu Solomon, Lorant Kiss, Mihai Glad, Cristina Preda.

