

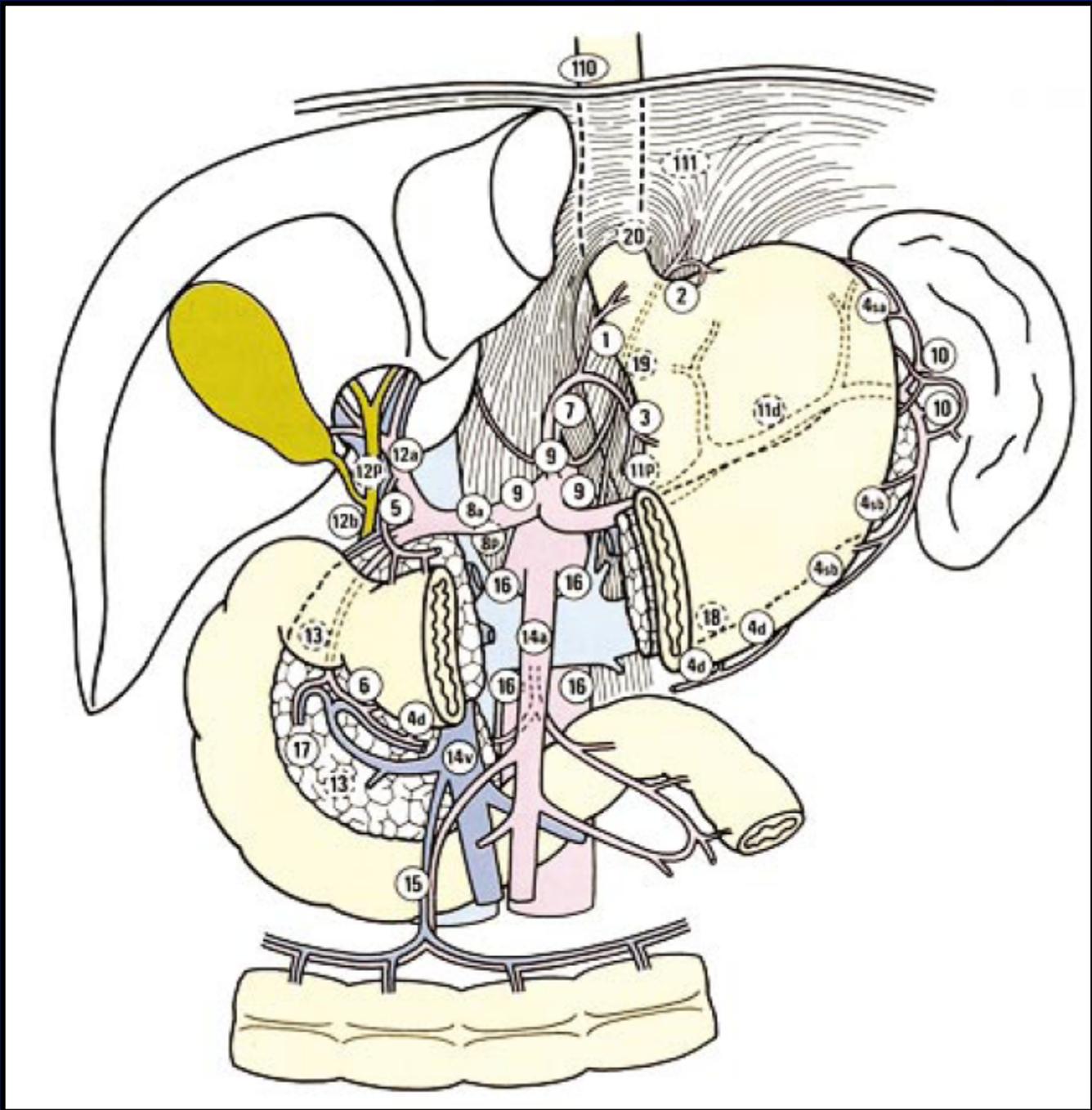


*Università Cattolica Del Sacro Cuore
Dipartimento di Scienze Chirurgiche
Divisione di Chirurgia Digestiva*

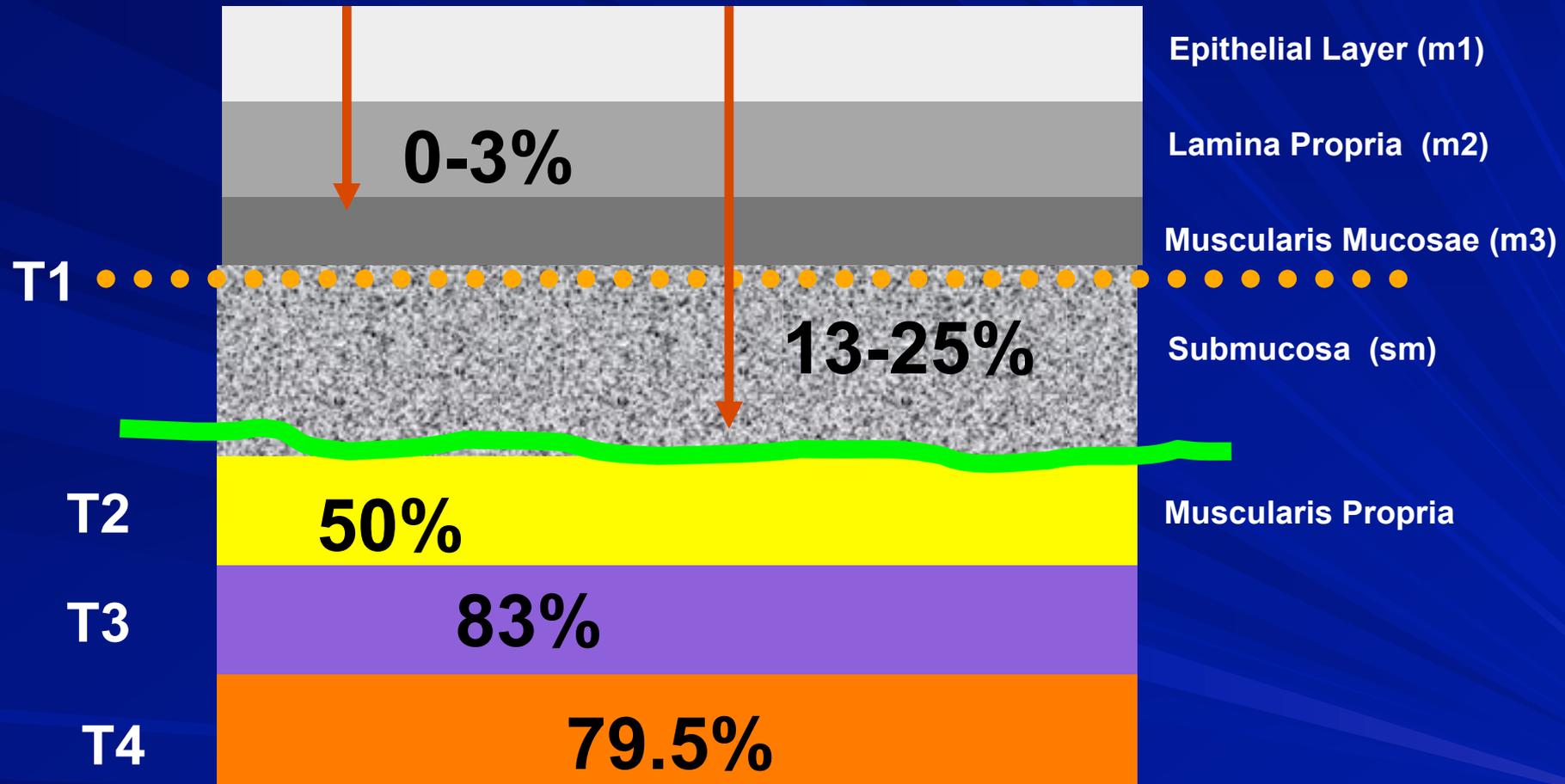
LE SEDI DI RECIDIVA LOCALE DOPO TRATTAMENTO CHIRURGICO

Prof. G.B. Doglietto





Lymph-nodes Involvement



Paris Classification. Gastrointest Endosc 2003;58:S3-S27.

A population-based study of tumor-node relationship, resection margins, and surgeon volume on gastric cancer survival

Chris J. de Gara, M.B., M.S.*, John Hanson, M.Sc., Stewart Hamilton, M.D.

Departments of Surgery and Epidemiology, Cross Cancer Institute, University of Alberta, 11560 University Ave., Edmonton, Alberta T6G 1Z2, Canada

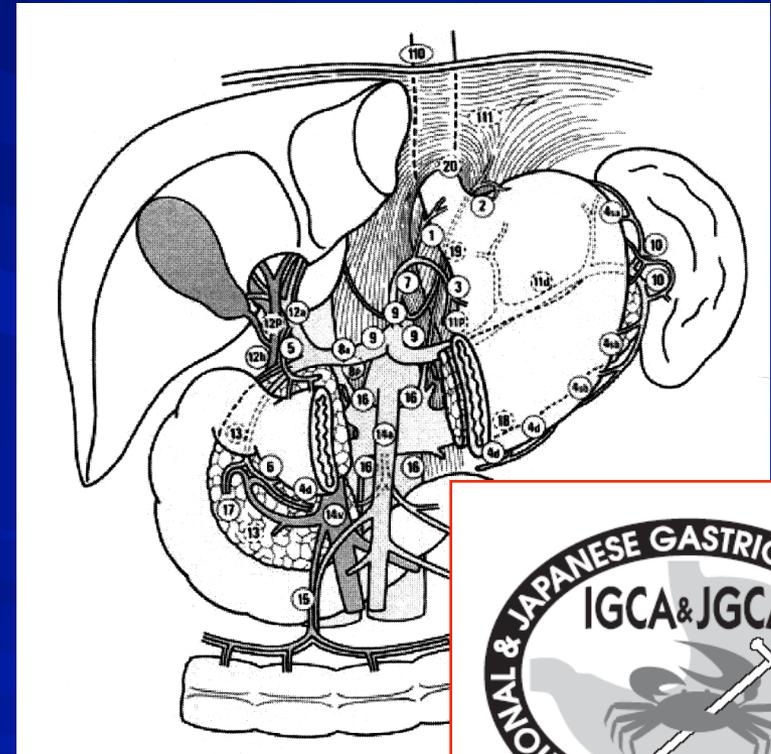
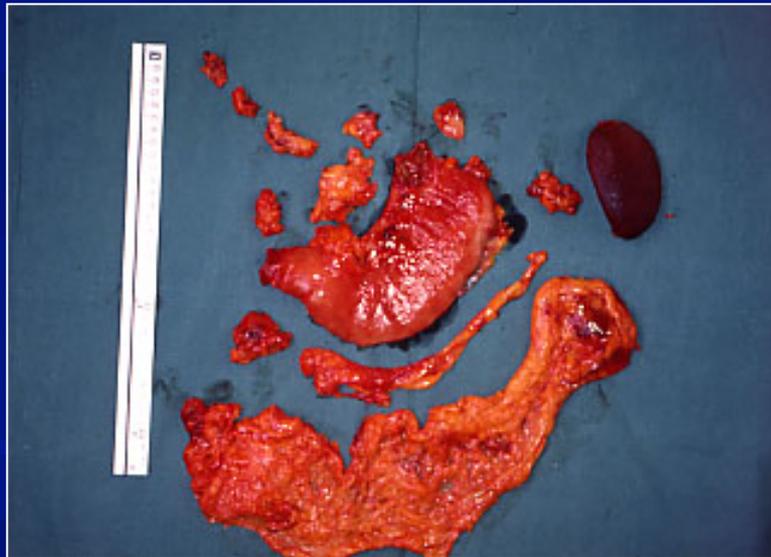
The American Journal of Surgery 186 (2003) 23-27
Scientific paper

QUALE SISTEMA di STADIAZIONE?



Numero dei Linfonodi?

Sede?



TNM
(AJCC/UICC)



✓ Il coinvolgimento linfonodale è il più importante
fattore prognostico in entrambi i sistemi

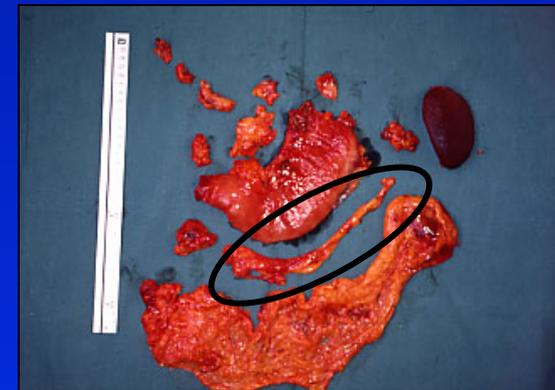
✓ I due sistemi TNM e JGCA
non sono sovrapponibili, ma complementari
(più del 30% dei pazienti TNM pN1 hanno
un alto rischio di morte perché JGCA pN2-3)

Numero dei Linfonodi

Greene FL, Page DL, Fleming ID, et al. *AJCC Cancer Staging Manual*. 6th ed. Chicago, IL: Springer-Verlag; 2002.

Numero dei Linfonodi

16 (VI ed. TNM)



Br. J. Surg. 1991, Vol. 78, July, 825-827

Lymph node counts in the upper abdomen: anatomical basis for lymphadenectomy in gastric cancer

P. K. Wagner,
A. Ramaswamy*,
J. Rüschoff*,
P. Schmitz-Moormann*
and M. Rothmund

Departments of Surgery and
*Pathology, Philipps University,
Marburg, Germany

Correspondence to:
Professor Dr P. K. Wagner,
Department of Surgery, Philipps
University Marburg,
Baldingerstraße,
D-3550 Marburg, Germany

The number of regional lymph nodes was determined in sites relevant to lymphadenectomy in gastric cancer in 30 cadavers. Tissue was cleared by dissolving fatty tissue, thus making lymph nodes with a diameter of at least 1 mm visible. All lymph node stations indicated by the Japanese Research Society for Gastric Cancer were studied. In stations 1-11 (corresponding with R_2 resection) an average of 27 nodes (range 17-44 nodes) was found, whereas stations 1-16 (corresponding with R_3 resection) showed an average of 43 nodes (range 25-64 nodes). These values are higher than those usually obtained from lymphadenectomy for gastric cancer. Striking individual differences in the total number of lymph nodes and the number of single stations was observed. The number of lymph nodes in these investigations are the normal anatomical values and serve as quality control of lymph node dissection in gastric carcinoma.

Numero dei Linfonodi

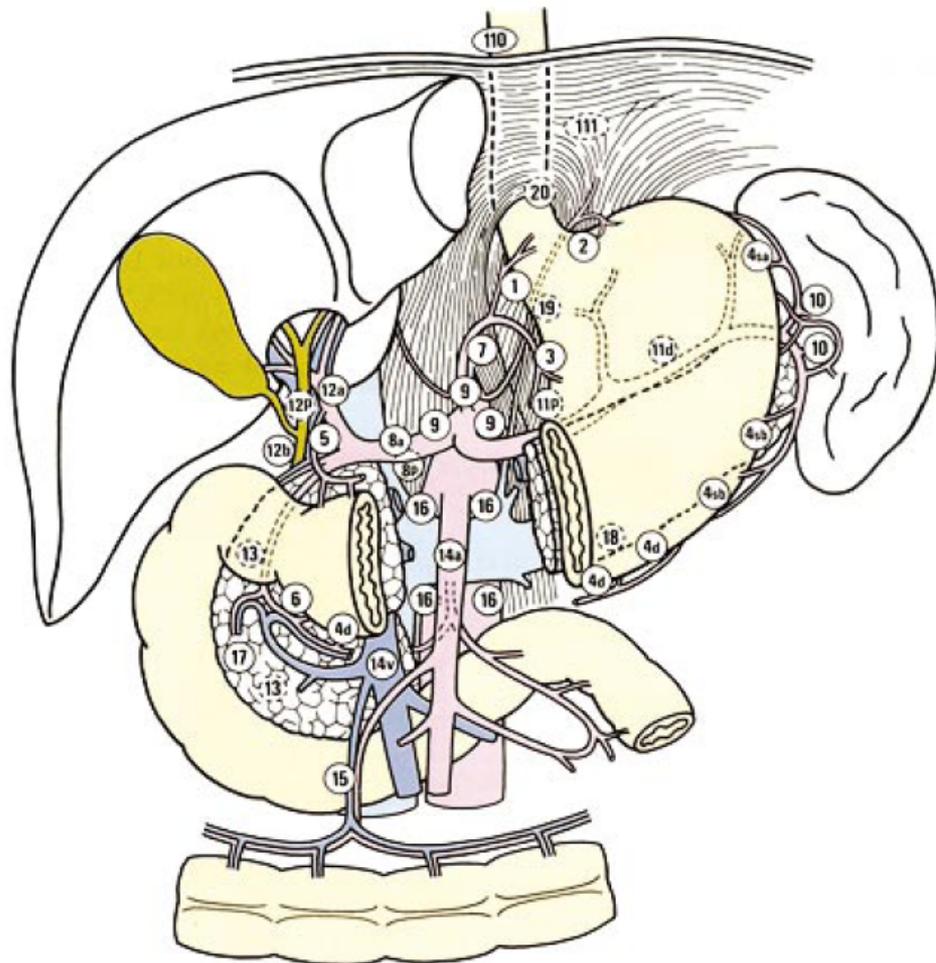
27



Japanese Classification of Gastric Carcinoma - 2nd English Edition -

Japanese Gastric Cancer Association

Association office, First Department of Surgery, Kyoto Prefectural University of Medicine, Kawaramachi, Kamigyo-ku, Kyoto, 602-0841, Japan



Gastric Cancer (1998) 1: 10-24

$n1 = D1$

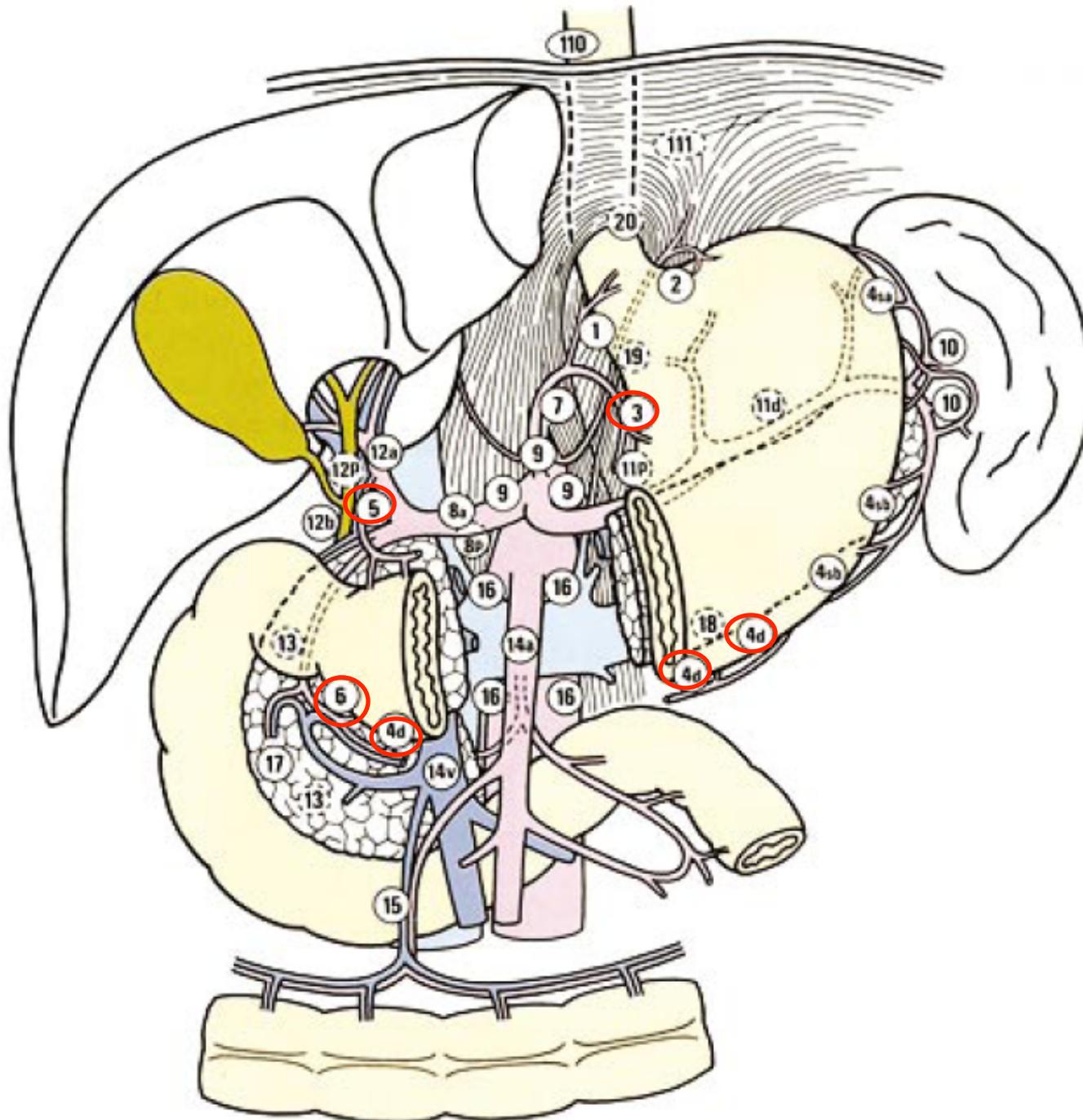
$n2 = D2$

$n3 = D3$

ANTRO

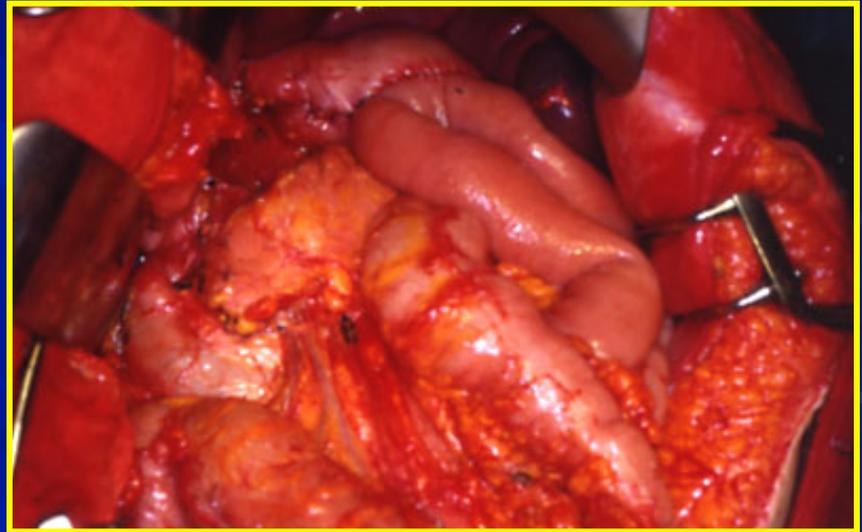
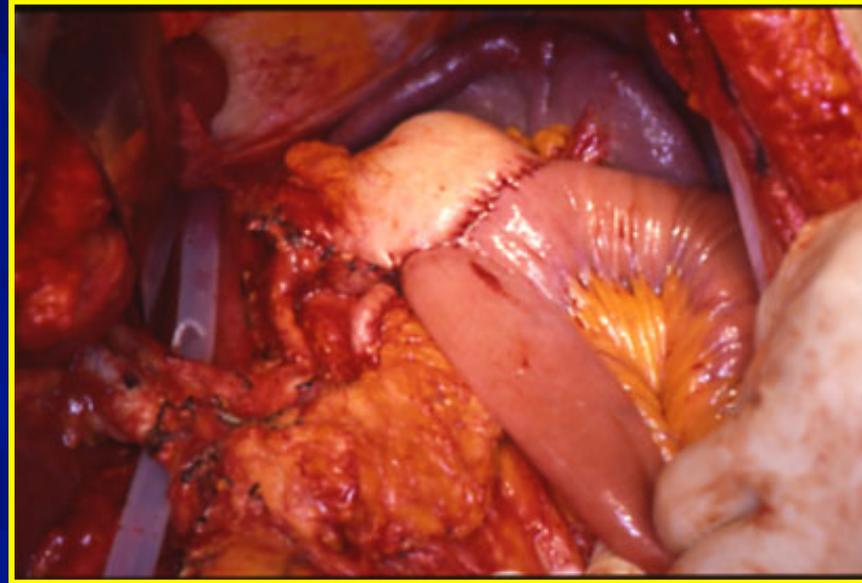
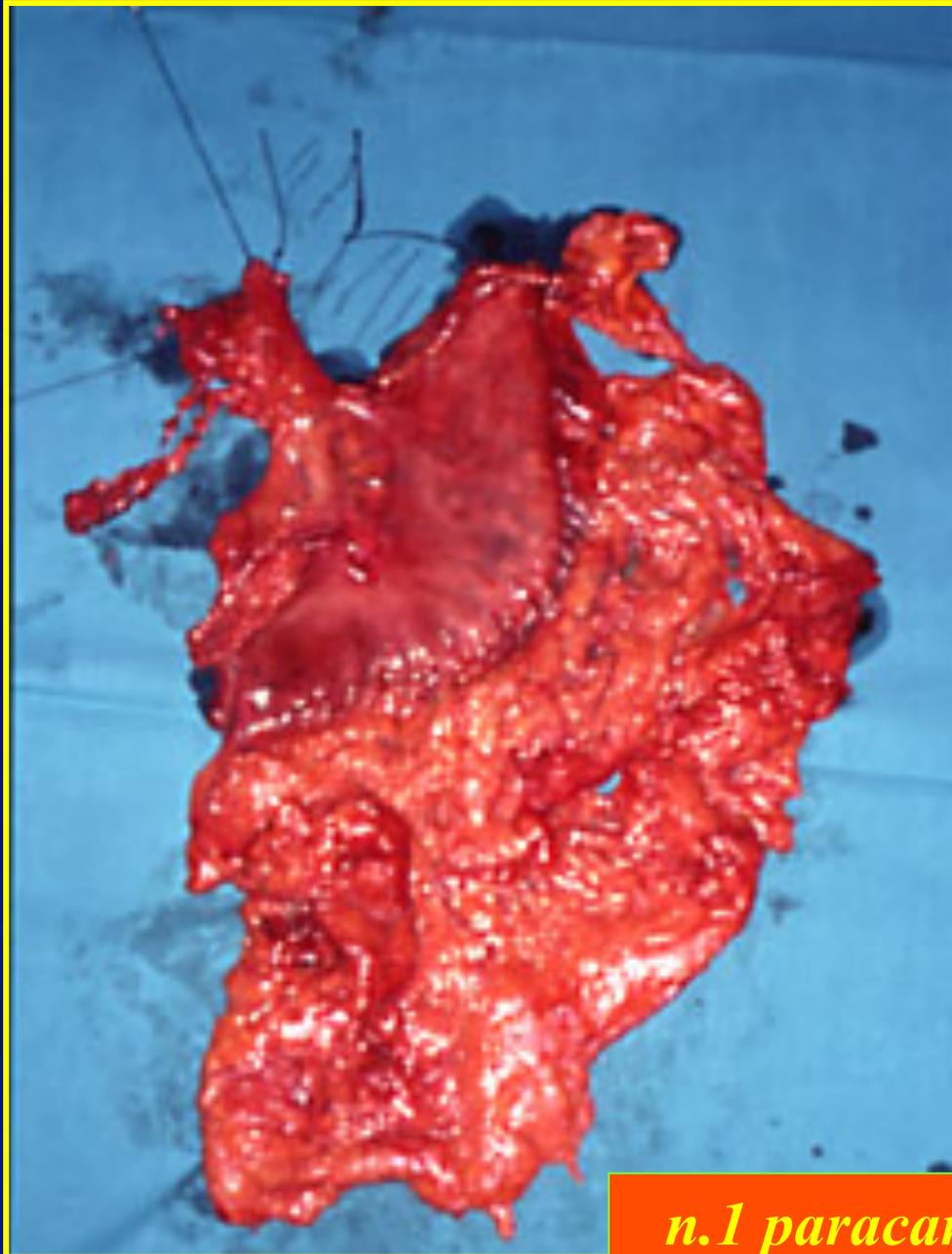
D1

- 3
- 4d
- 5
- 6

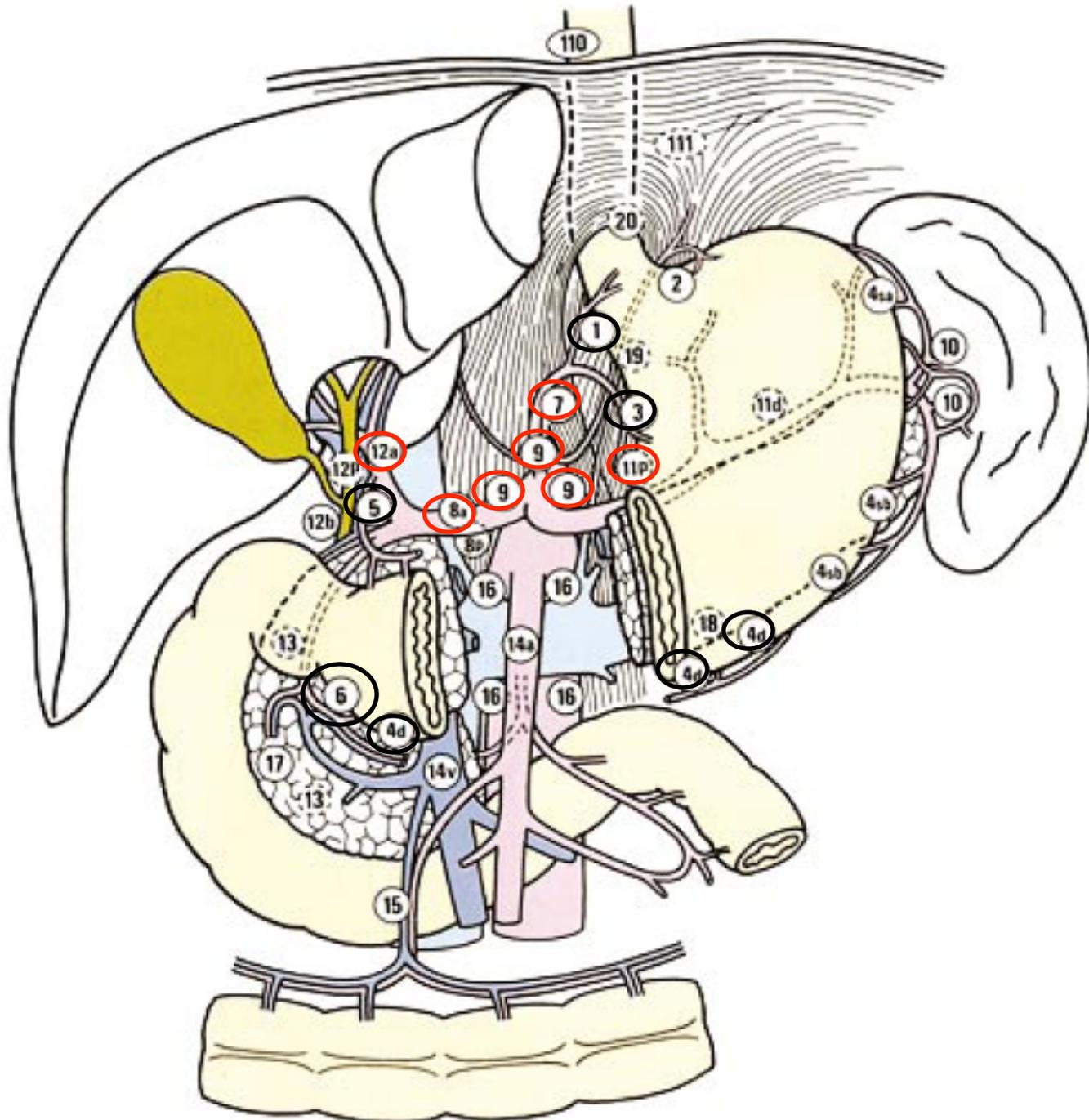


CANCRO GASTRICO T2-T3 (IGCA)

Antro



n.1 paracardiali dx II livello



CORPO

D2

- 7
- 8 a
- 9
- 11 p
- 12 a

La *LINFOADENECTOMIA* nel CANCRO dello STOMACO



Limitata

D1?

Estesa

D2-D3?

Review

Br. J. Surg. 1992, Vol. 79, April,
293-299

J. A. Akoh and
I. M. C. Macintyre

Improving survival in gastric cancer: review of 5-year survival rates in English language publications from 1970

Table 7 *Japanese and non-Japanese series compared*

| | Japanese | Non-Japanese |
|-------------------------------|----------|--------------|
| No. of series | 15 | 85 |
| Total patients | 19 048 | 80 738 |
| Mean 5-year survival rate (%) | | |
| After curative resection | 60.5 | 39.4 |

Br. J. Surg. 1993, Vol. 80, September,
1153-1156

F. Pacelli, G. B. Doglietto,
R. Bellantone, S. Alfieri,
A. Sgadari* and F. Crucitti

Extensive *versus* limited lymph node dissection for gastric cancer: a comparative study of 320 patients

| <i>Mortality (%)</i> | | <i>5-year survival rate (%)</i> | |
|----------------------|-----------|---------------------------------|-----------|
| <i>D1</i> | <i>D2</i> | <i>D1</i> | <i>D2</i> |
| 7.4 | 3.8 | 41.5 | 66.3 |

p<0.05

Br. J. Surg. 1993, Vol. 80, August,
1015-1018

J. R. Siewert, K. Böttcher,
J. D. Roder, R. Busch*,
P. Hermanek†,
H. J. Meyer‡ and the
German Gastric
Carcinoma Study Group

Prognostic relevance of systematic lymph node dissection in gastric carcinoma

| <i>Mortality (%)</i> | | <i>5-year survival rate (%)</i> | |
|----------------------|-----------|---------------------------------|-----------|
| <i>D1</i> | <i>D2</i> | <i>D1</i> | <i>D2</i> |
| 5.2 | 5.0 | 19.9 | 49.2 |

p<0.001

Stage II

Patient survival after D₁ and D₂ resections for gastric cancer: long-term results of the MRC randomized surgical trial

A Cuschieri¹, S Weeden², J Fielding³, J Bancewicz⁴, J Craven⁵, V Joypaul¹, M Sydes² and P Fayers², for the Surgical Co-operative Group

Mortality (%)

D1 D2

6.5 13

p<0.001

5-year survival rate (%)

D1 D2

35 33

The New England Journal of Medicine

EXTENDED LYMPH-NODE DISSECTION FOR GASTRIC CANCER

J.J. BONENKAMP, J. HERMANS, M. SASAKO, AND C.J.H. VAN DE VELDE, FOR THE DUTCH GASTRIC CANCER GROUP*

Mortality (%)

D1 D2

4.0 10

p<0.001

5-year survival rate (%)

D1 D2

45 47

MRC and Dutch Trials: Criticisms



The New England Journal of Medicine

Established in 1812 as THE NEW ENGLAND JOURNAL OF MEDICINE AND SURGERY

VOLUME 341

AUGUST 12, 1999

NUMBER 7

LYMPH-NODE DISSECTION FOR GASTRIC CANCER

IN this issue of the *Journal*, Bonenkamp et al.¹ report the results of a Dutch trial in which 711 patients with gastric cancer were randomly assigned to gastrectomy with either a limited (D1) lymph-node dissection (380 patients) or an extended (D2) lymph-node dissection (331 patients). The concept of extended lymph-node dissection was developed five decades ago, and there are claims based on historical data that extended surgical resection, especially extended lymph-node dissection, improves the outcome

MURRAY F. BRENNAN, M.D.
Memorial Sloan-Kettering Cancer Center
New York, NY 10021

Surgery for Gastric Cancer

To the Editor: The results of the randomized trial comparing extended (D2) and limited (D1) lymph-node dissection for gastric cancer, reported by Bonenkamp et al. (March 25 issue),¹ should be interpreted with caution. Patients in the D2 group had a higher in-hospital death rate than those in the D1 group. It has already been suggested that the learning curve and protocol design (removal of the pancreatic tail in patients with a proximal tumor who were undergoing a D2 dissection) account for the difference.² The high percentage of in-hospital deaths in the D2 group might have introduced a bias in the estimate of long-term survival. The excess early mortality in the D2

FABIO PACELLI, M.D.
ANTONIO SGADARI, M.D.
G.B. DOGLIETTO, M.D.
Catholic University School of Medicine
00168 Rome, Italy

***DEVIATIONS FROM THE
PROTOCOL (50%)***

***LEARNING CURVE
DURING THE STUDY***

***SPLENOPANCREASECTOMY
REQUIRED IN THE D2 ARM
FOR PROXIMAL AND
MIDDLE FORMS***

Extended Lymph Node Dissection for Gastric Cancer: Who May Benefit? Final Results of the Randomized Dutch Gastric Cancer Group Trial

H.H. Hartgrink, C.J.H. van de Velde, H. Putter, J.J. Bonenkamp, E. Klein Kranenbarg, I. Songun, K. Welvaart, J.H.J.M. van Krieken, S. Meijer, J.T.M. Plukker, P.J. van Elk, H. Obertop, D.J. Gouma, J.J.B. van Lanschot, C.W. Taat,† P.W. de Graaf, M.F. von Meyenfeldt, H. Tilanus, and M. Sasako

VOLUME 22 · NUMBER 11 · JUNE 1 2004

JOURNAL OF CLINICAL ONCOLOGY

Br J Cancer. 2004 May 4;90(9):1727-32.

Related Articles

BJC British Journal of Cancer

Survival results of a multicentre phase II study to evaluate D2 gastrectomy for gastric cancer.

DeGiuli M, Sasako M, Ponti A, Calvo F

Br J Cancer. 2004 May 17;90(10):1888-92.

Related Articles

BJC British Journal of Cancer

Prospective comparison of D1 vs modified D2 gastrectomy for carcinoma.

Edwards P, Blackshaw GR, Lewis WG, Barry JD, Allison MC, Jones

Page 1 of 2

D2 lymphadenectomy offers survival benefit if morbidity and mortality can be avoided

Gastrectomy with extended lymphadenectomy for primary treatment of gastric cancer

P. McCulloch¹, M. Eidi Niita², H. Kazi³ and J. J. Gama-Rodrigues²

¹Academic Unit of Surgery, University Hospital Aintree, University of Liverpool, Liverpool, UK, ²Gastric Surgery Group and The Department of Digestive Surgery, Hospital das Clinicas, University of Sao Paulo School of Medicine, and ³Academic Unit of Surgery, University of Liverpool, Liverpool, UK

Correspondence to: Mr P. McCulloch, Clinical Science Centre, University Hospital Aintree, Lower Lane, Liverpool L9 7AL, UK
(e-mail: petermcculloch@doctors.org.uk)

British Journal of Surgery 2005; 92: 5–13

other explanations cannot be excluded. No inferences were drawn about the comparative merits of D1 and D2 surgery from the cohort studies. It was, however, possible to conclude that D2 gastric resection could be performed with high survival rates and low operative mortality in specialist units with a high throughput.

Pancreas-Preserving Total Gastrectomy for Gastric Cancer

Giovanni Battista Doglietto, MD; Fabio Pacelli, MD; Paola Caprino, MD;
Maurizio Bossola, MD; Carmine Di Stasi, MD

No. of Patients: 228

Morbidity: 33%

Pancreatic necrosis: 0

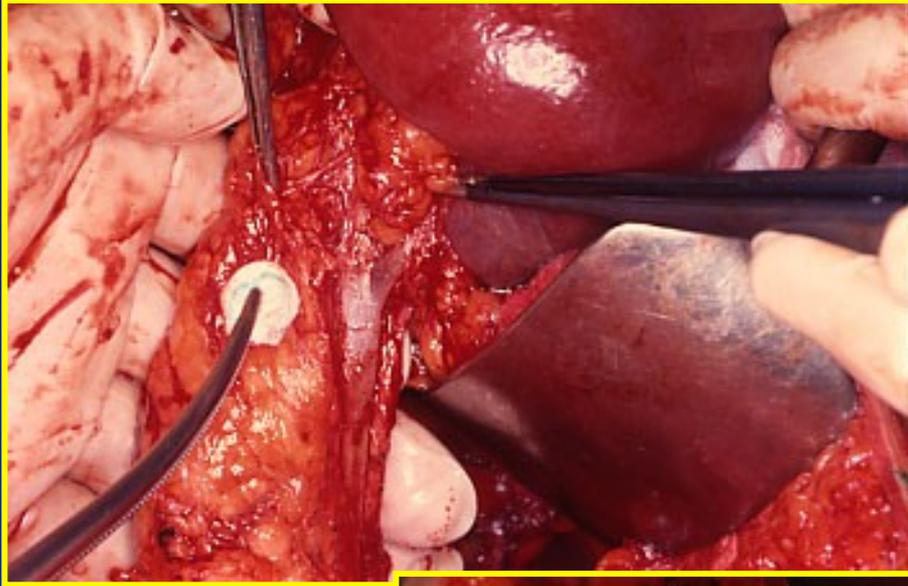
Pancreatic fistula: 0.9 %

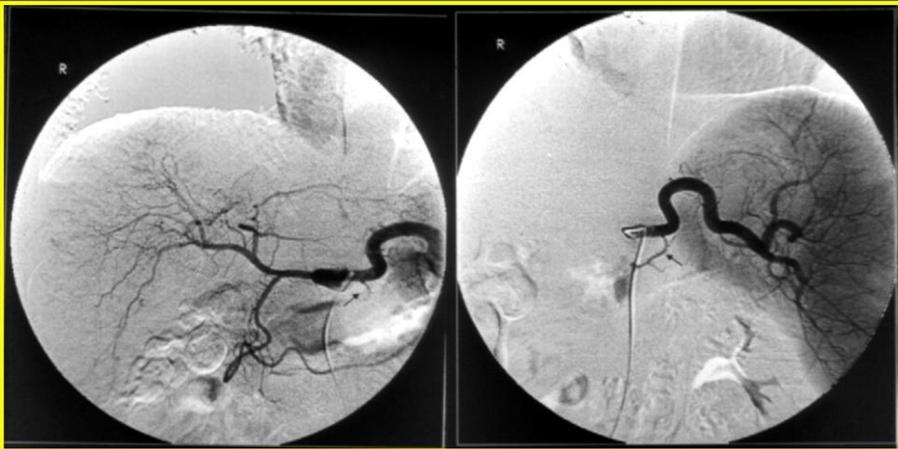
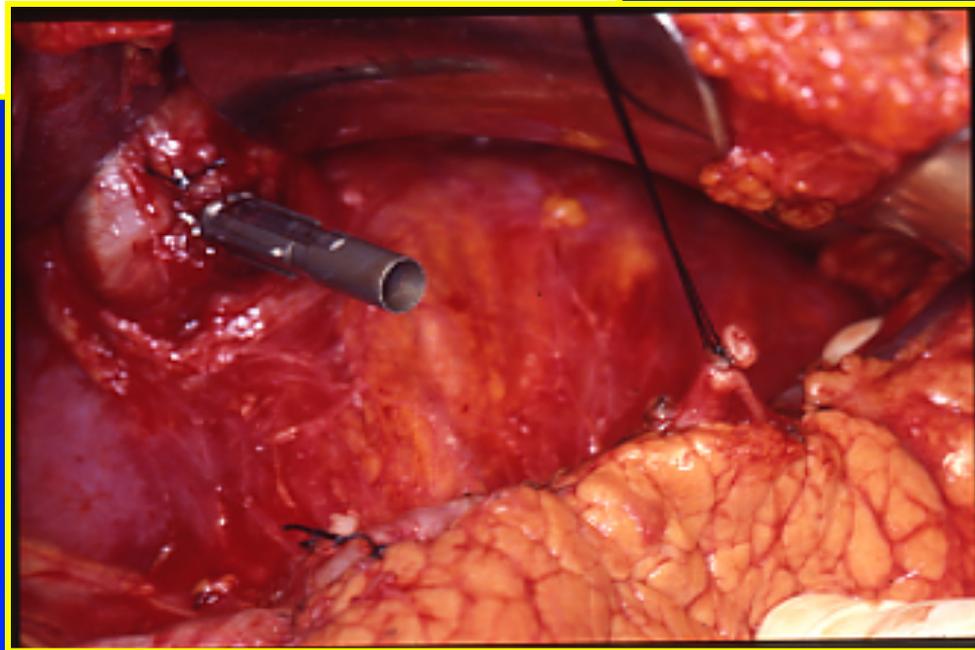
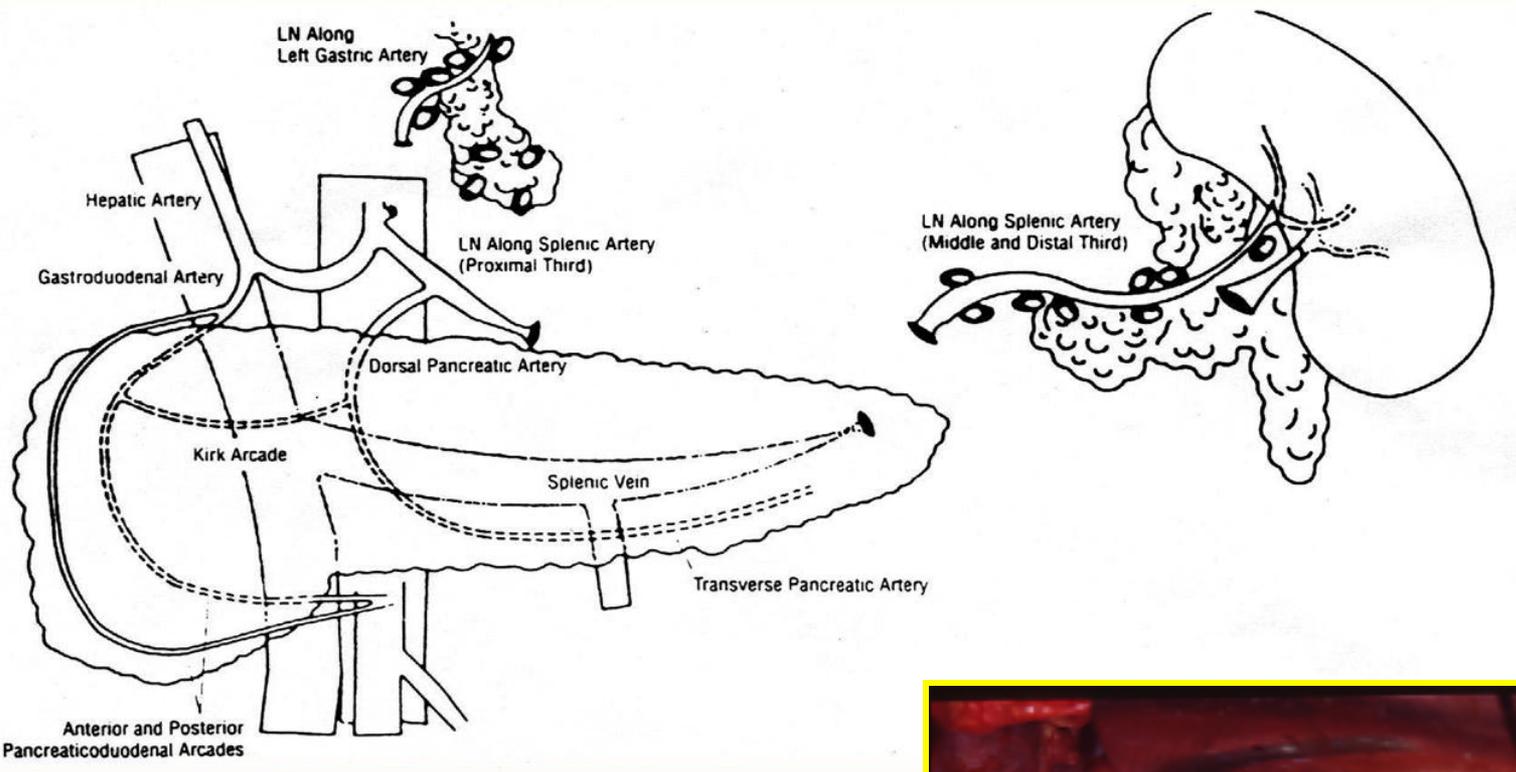
Post-operative pancreatitis 0

Mortality: 3.9%

D2 pancreas preserving lymphadenectomy can be accomplished without significant morbidity and mortality

LINFOADENECTOMIA D2 "PANCREAS-PRESERVING"





**CHEMORADIOTHERAPY AFTER SURGERY COMPARED WITH SURGERY ALONE
FOR ADENOCARCINOMA OF THE STOMACH OR GASTROESOPHAGEAL
JUNCTION**

JOHN S. MACDONALD, M.D., STEPHEN R. SMALLEY, M.D., JACQUELINE BENEDETTI, PH.D., SCOTT A. HUNDAHL, M.D.,
NORMAN C. ESTES, M.D., GRANT N. STEMERMANN, M.D., DANIEL G. HALLER, M.D., JAFFER A. AJANI, M.D.,
LEONARD L. GUNDERSON, M.D., J. MILBURN JESSUP, M.D., AND JAMES A. MARTENSON, M.D.

N Engl J Med, Vol. 345, No. 10 - September 6, 2001

Linfoadenectomia: - 90%: D0-D1

**Perioperative Chemotherapy versus Surgery Alone
for Resectable Gastroesophageal Cancer**

David Cunningham, M.D., William H. Allum, M.D., Sally P. Stenning, M.Sc., Jeremy N. Thompson, M.Chir.,
Cornelis J.H. Van de Velde, M.D., Ph.D., Marianne Nicolson, M.D., J. Howard Scarffe, M.D., Fiona J. Lofts, Ph.D.,
Stephen J. Falk, M.D., Timothy J. Iveson, M.D., David B. Smith, M.D., Ruth E. Langley, M.D., Ph.D.,
Monica Verma, M.Sc., Simon Weeden, M.Sc., and Yu Jo Chua, M.B., B.S., for the MAGIC Trial Participants*

N ENGL J MED 355:1 WWW.NEJM.ORG JULY 6, 2006

Linfoadenectomia: non specificata

CLINICAL INVESTIGATION

Stomach

**AN OBSERVATIONAL STUDY SUGGESTING CLINICAL BENEFIT FOR
ADJUVANT POSTOPERATIVE CHEMORADIATION IN A POPULATION OF
OVER 500 CASES AFTER GASTRIC RESECTION WITH D2 NODAL
DISSECTION FOR ADENOCARCINOMA OF THE STOMACH**

SUNG KIM, M.D.,* DO HOON LIM, M.D.,† JEEYUN LEE, M.D.,‡ WON KI KANG, M.D.,§
JOHN S. MACDONALD, M.D.,§ CHAN HYUNG PARK, M.D.,|| SE HOON PARK, M.D.,‡
SE-HOON LEE, M.D.,‡ KIHYUN KIM, M.D.,‡ JOON OH PARK, M.D.,‡ WON SEOG KIM, M.D.,‡
CHUL WON JUNG, M.D.,‡ YOUNG SUK PARK, M.D.,‡ YOUNG-HYUCK IM, M.D.,‡
TAE SUNG SOHN, M.D.,* JAE HYUNG NOH, M.D.,* JIN SEOK HEO, M.D.,* YONG IL KIM, M.D.,*
CHUL KIM, M.D.,*

I. J. Radiation Oncology • Biology • Physics Volume 63, Number 5, 2005

Linfoadenectomia: TUTTI D2

ORIGINAL ARTICLE

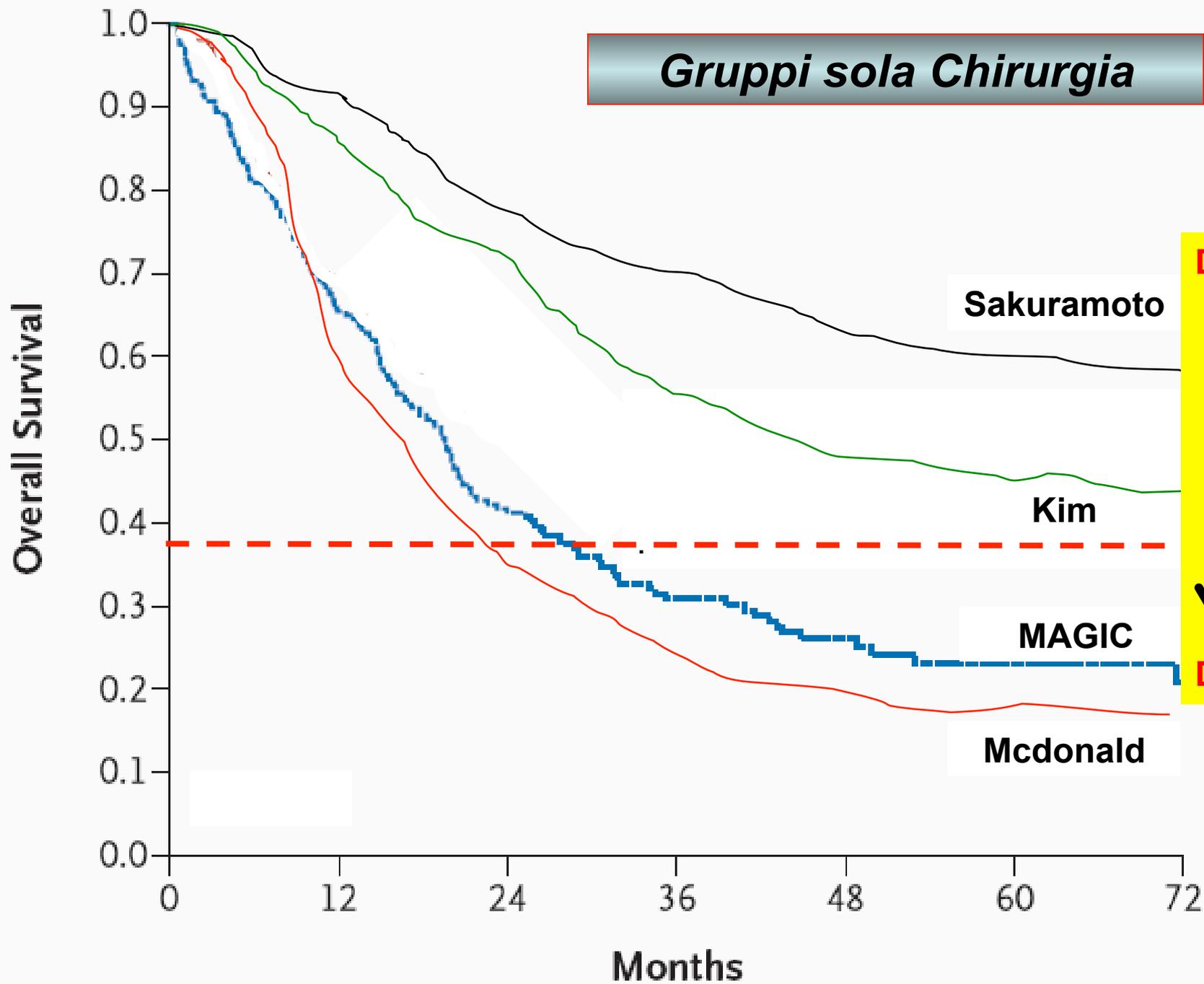
**Adjuvant Chemotherapy for Gastric Cancer
with S-1, an Oral Fluoropyrimidine**

Shinichi Sakuramoto, M.D., Mitsuru Sasako, M.D., Toshiharu Yamaguchi, M.D.,
Taira Kinoshita, M.D., Masashi Fujii, M.D., Atsushi Nashimoto, M.D.,
Hiroshi Furukawa, M.D., Toshifusa Nakajima, M.D., Yasuo Ohashi, Ph.D.,
Hiroshi Imamura, M.D., Masayuki Higashino, M.D., Yoshitaka Yamamura, M.D.,
Akira Kurita, M.D., and Kuniyoshi Arai, M.D., for the ACTS-GC Group*

N ENGL J MED 357:18 WWW.NEJM.ORG NOVEMBER 1, 2007

Linfoadenectomia: TUTTI D2

Gruppi sola Chirurgia



Four Hundred Consecutive Total Gastrectomies for Gastric Cancer

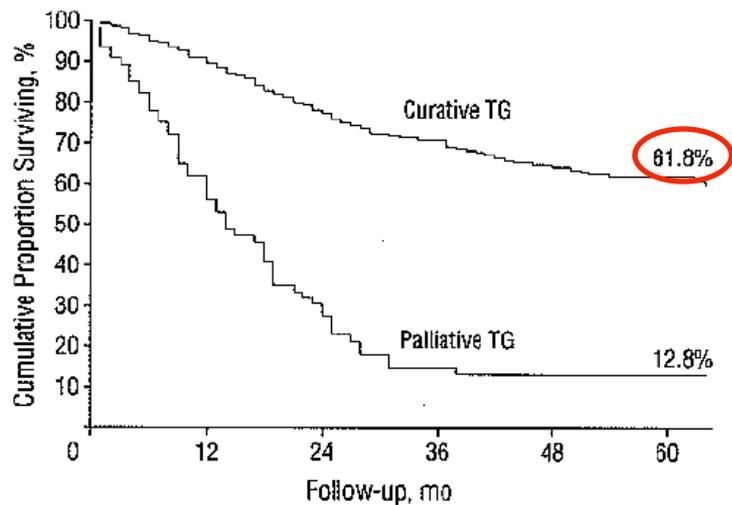
A Single-Institution Experience

Fabio Pacelli, MD; Valerio Papa, MD; Fausto Rosa, MD; Antonio Pio Tortorelli, MD; Alejandro Martin Sanchez, MD; Marcello Covino, MD; Maurizio Bossola, MD; Giovanni Battista Doglietto, MD

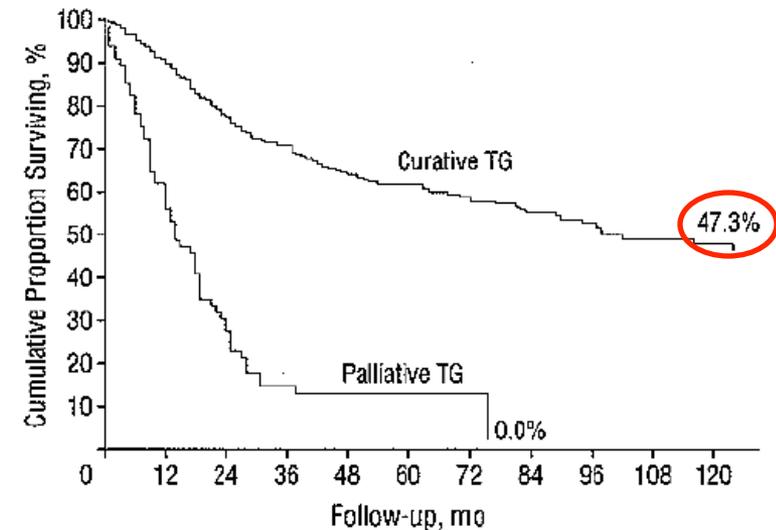
Mean n° dissected nodes:

51.7

ARCH SURG/VOL 143 (NO. 8), AUG 2008



Sopravvivenza globale a 5 anni : 61.3%



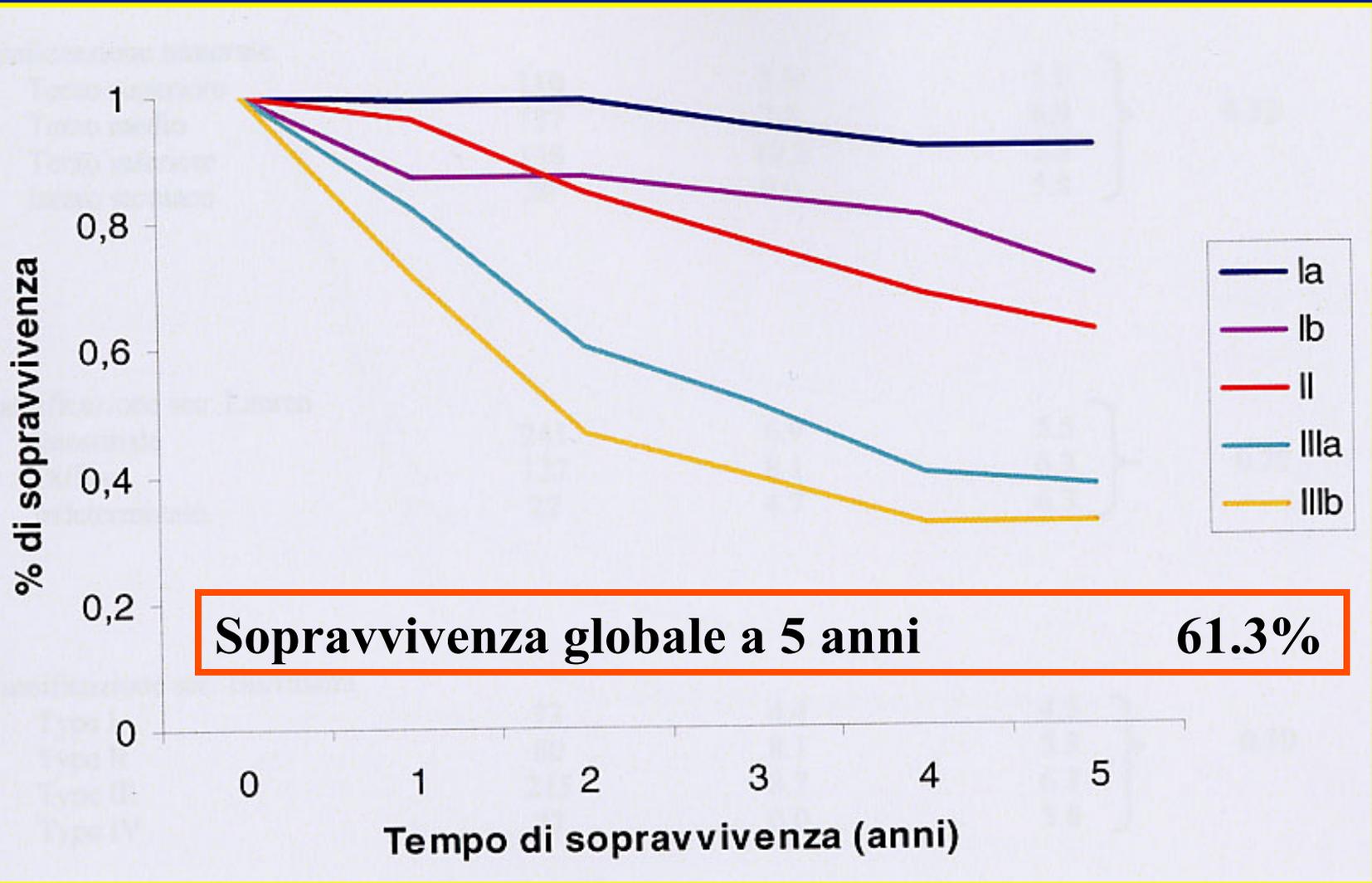
Sopravvivenza globale a 10 anni : 47.3%

CANCRO GASTRICO 1981-2010

Chirurgia Digestiva – Policlinico A. Gemelli UCSC – Roma

| | Trattamento radicale | Trattamento palliativo | Totale |
|-----------------------------------|-----------------------------|-------------------------------|---------------|
| <i>Pazienti</i> | 693 | 507 | 1200 |
| | | | |
| <i>Tipo di resezione gastrica</i> | | | |
| Gastrectomia totale | 342 | 90 | 432 |
| Gastrectomia subtotale | 303 | 99 | 402 |
| Resezione moncone gastrico | 38 | - | 38 |
| By-pass | - | 123 | 123 |
| Laparotomia esplorativa | - | 93 | 93 |
| Non operati | - | 112 | 112 |

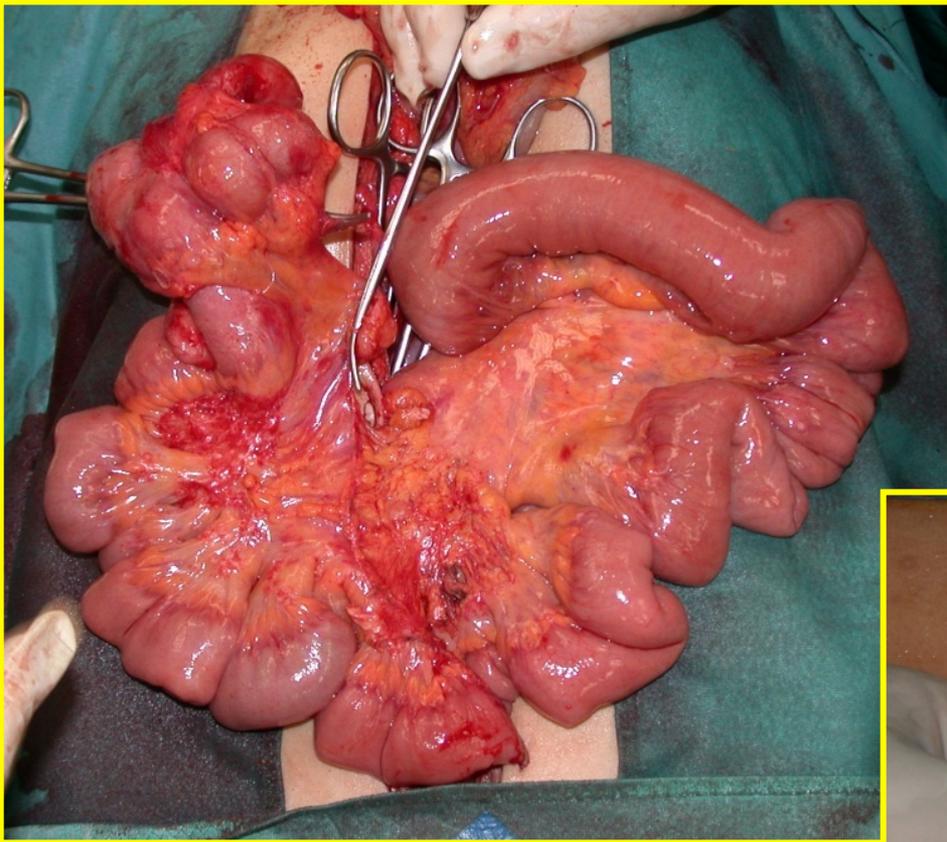
Linfadenectomia D2/D3



SEDI DI RECIDIVA

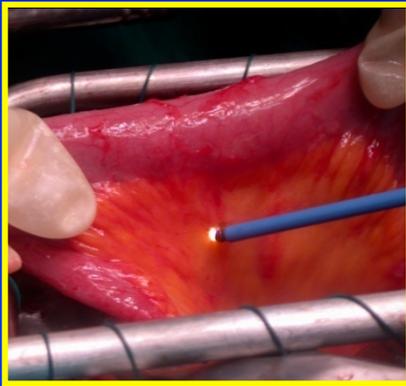
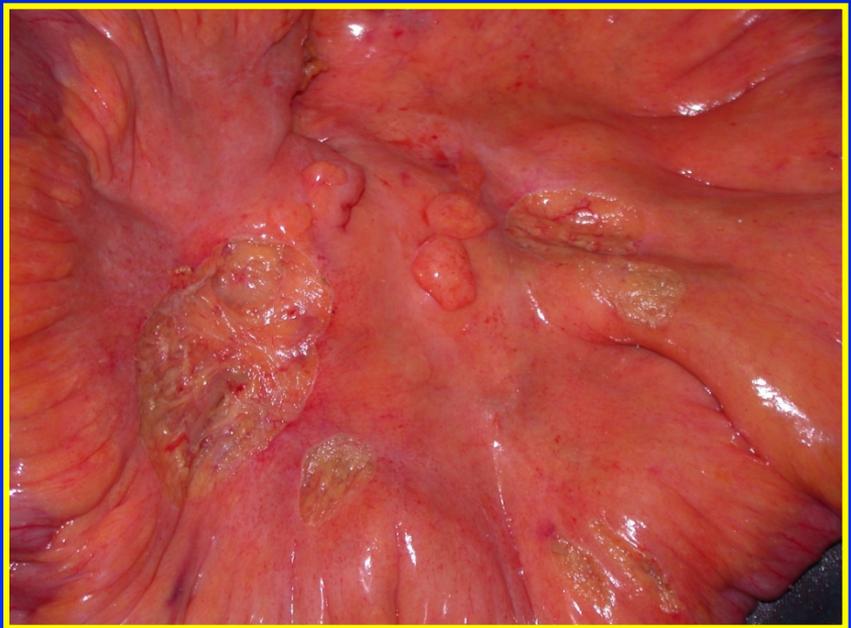
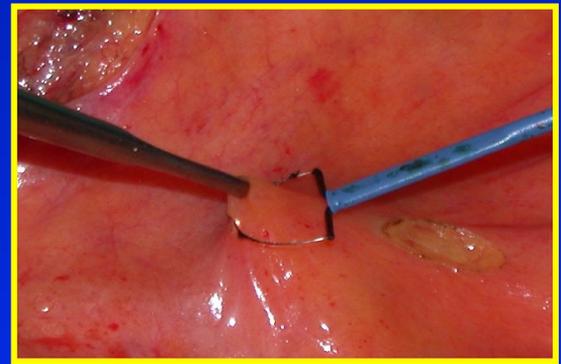
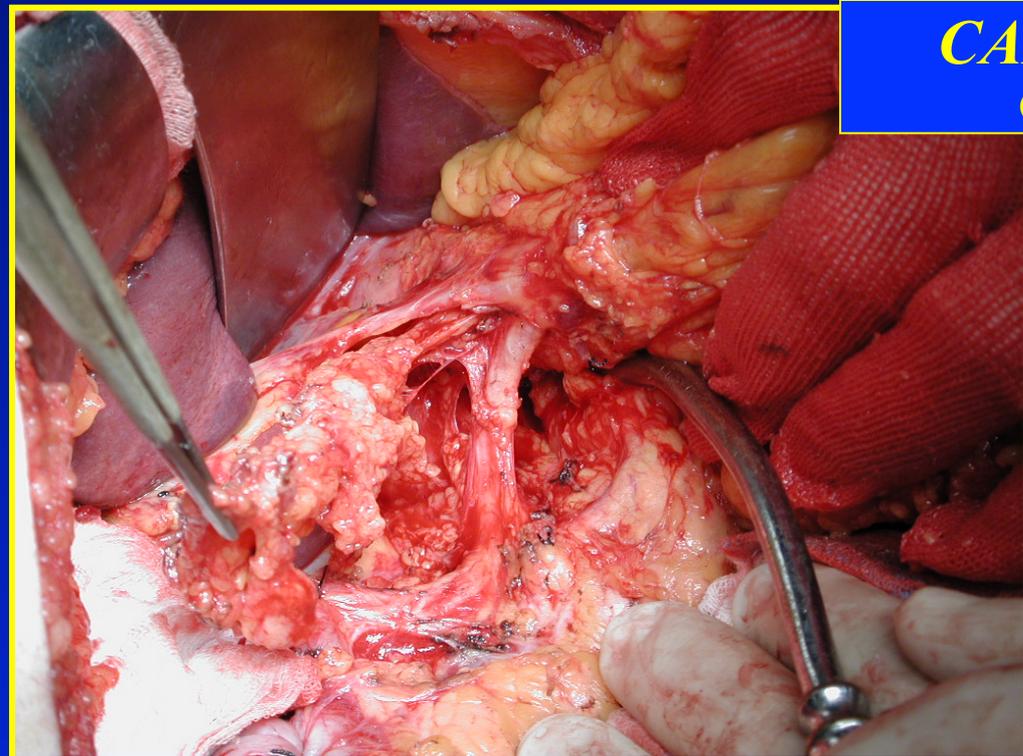
- ***CARCINOSI PERITONEALE/KRUKENBERG***
- ***LOCALE***
 - *viscerale*
 - *extraviscerale*
- ***LINFONODALE***
- ***RETROPERITONEALE***
- ***METASTASI A DISTANZA***

CARCINOSI PERITONEALE



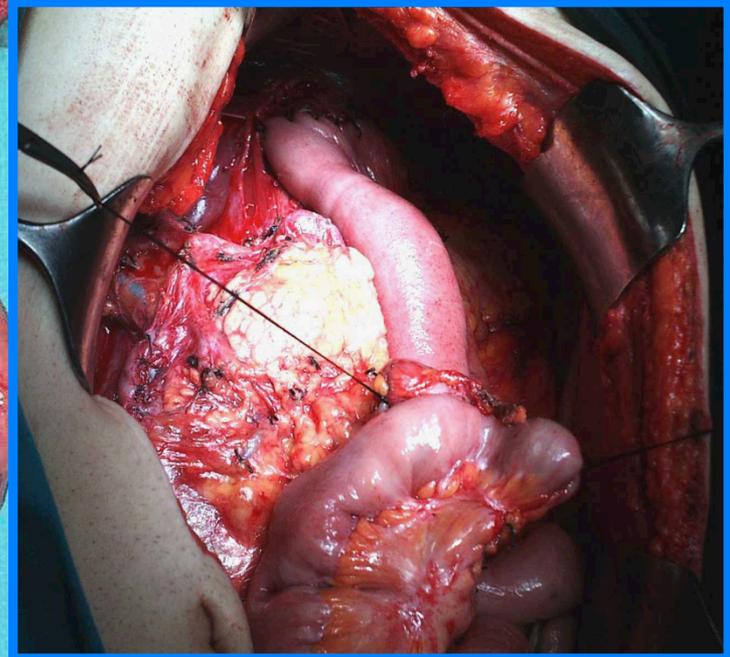
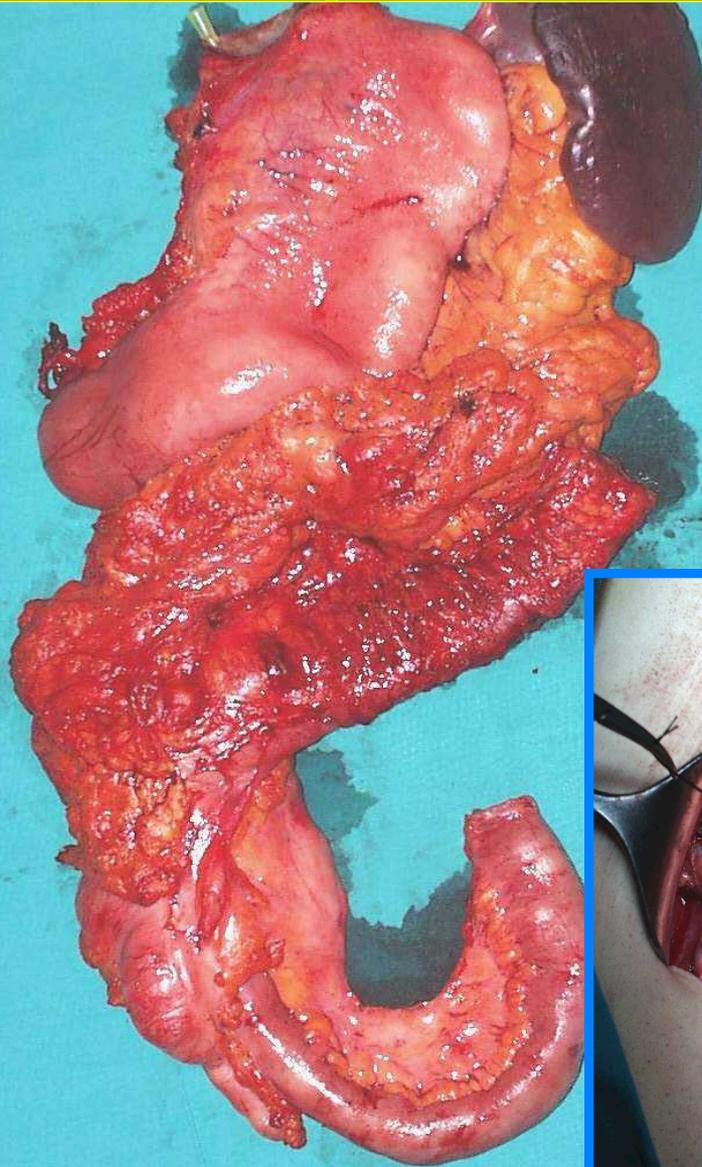
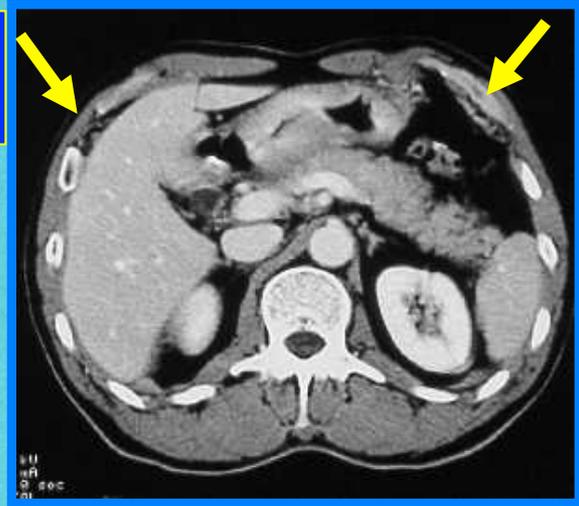
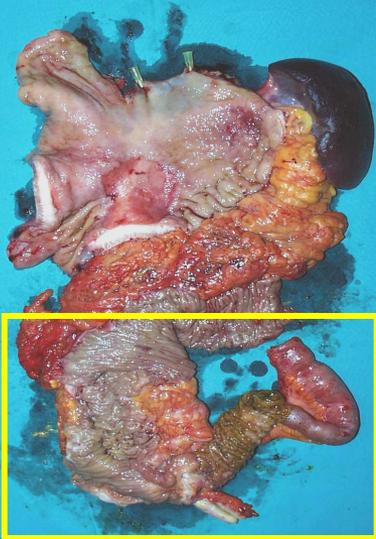
CANCRO GASTRICO

Carcinosi peritoneale

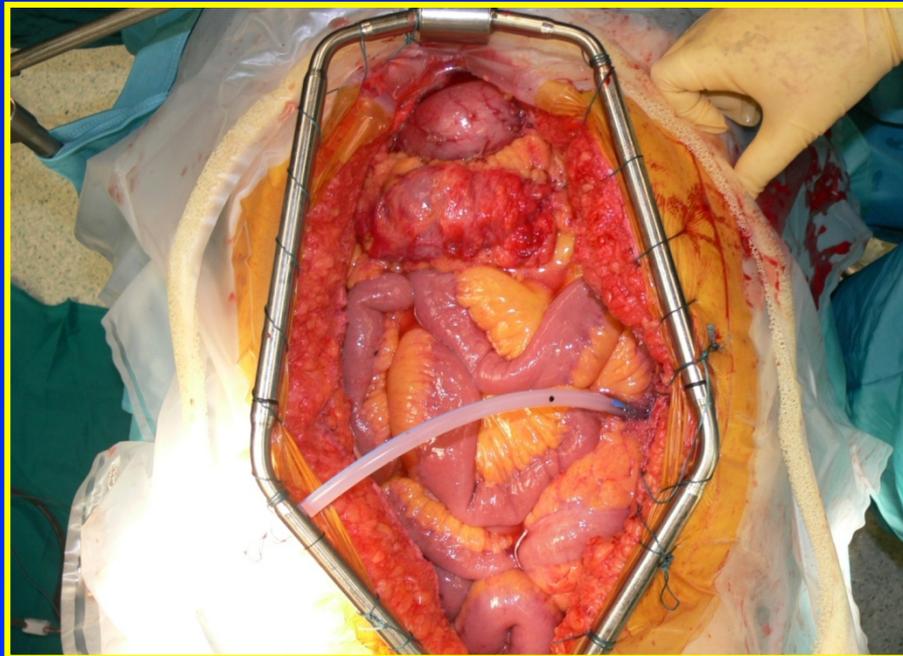
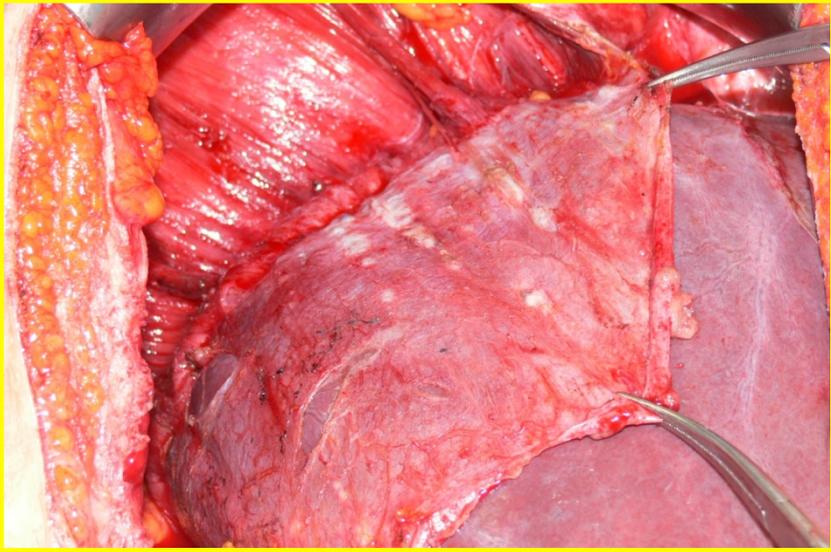


CANCRO GASTRICO

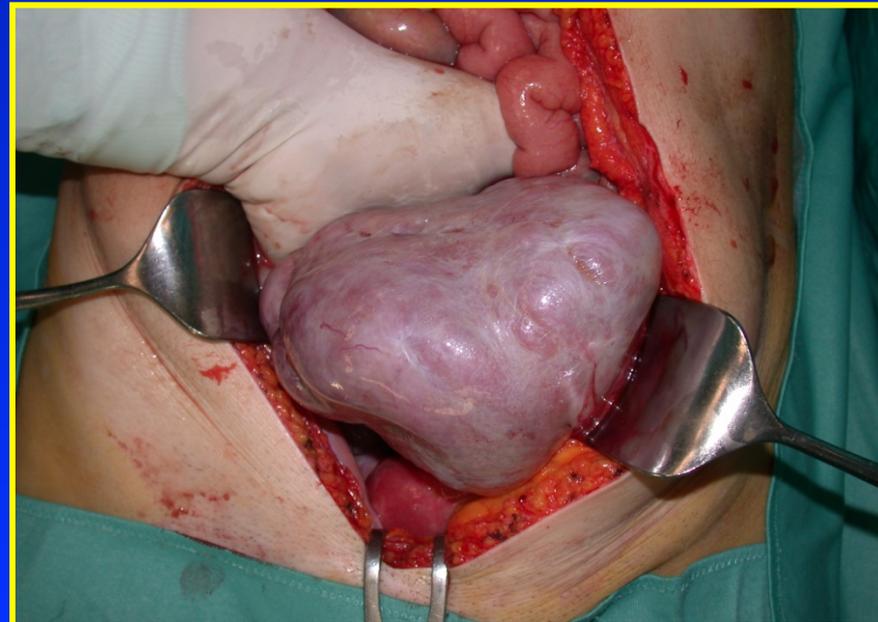
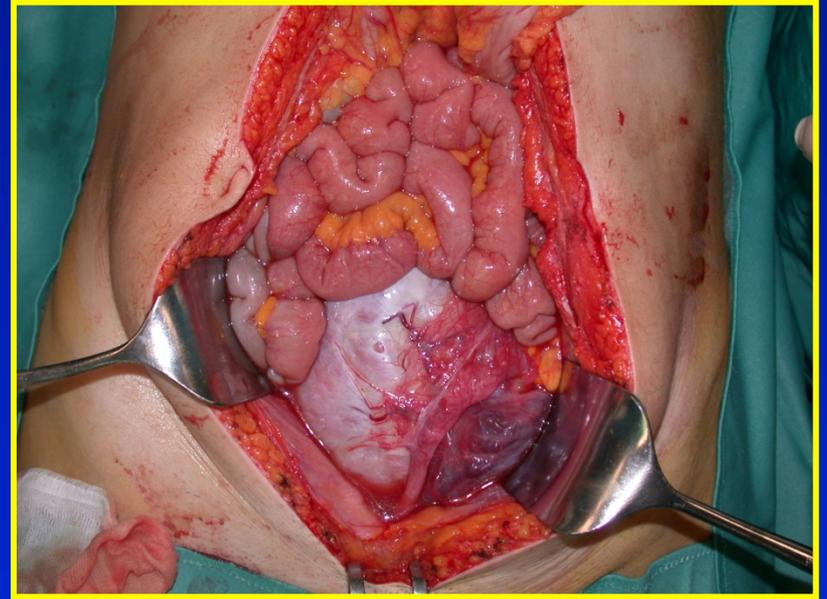
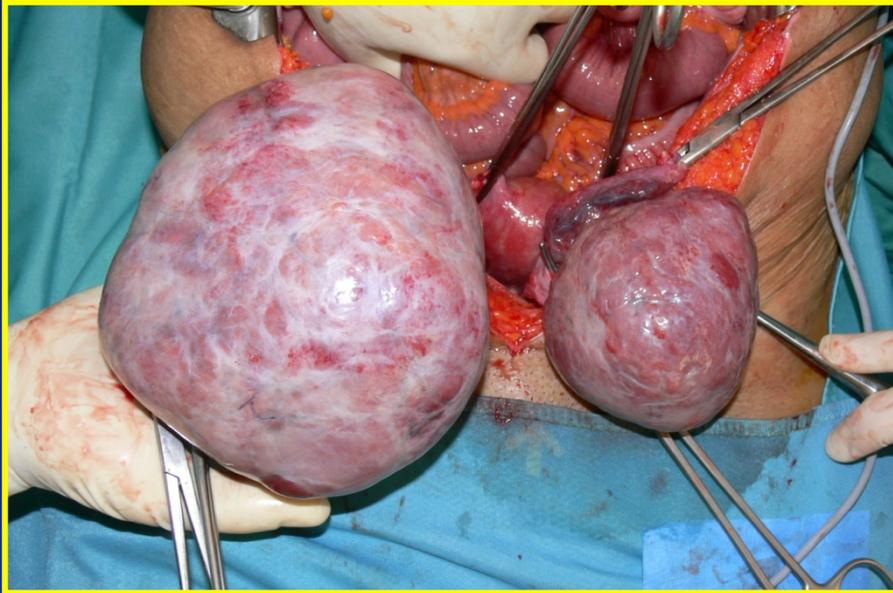
Carcinosi peritoneale



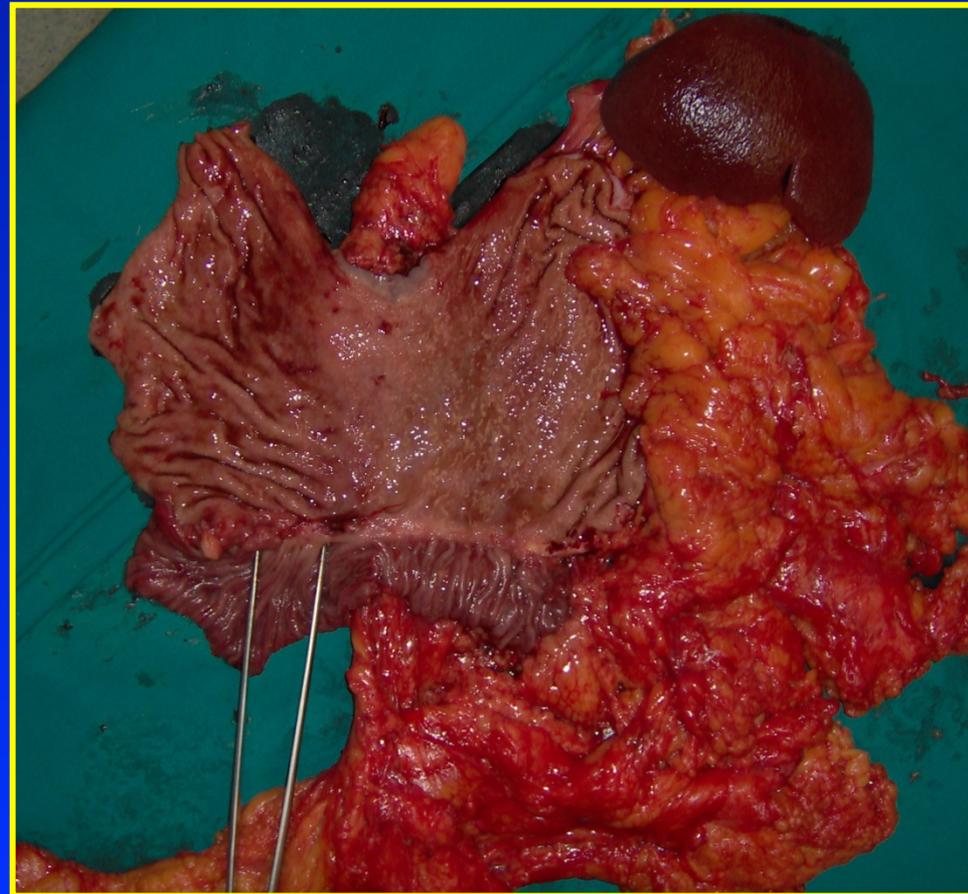
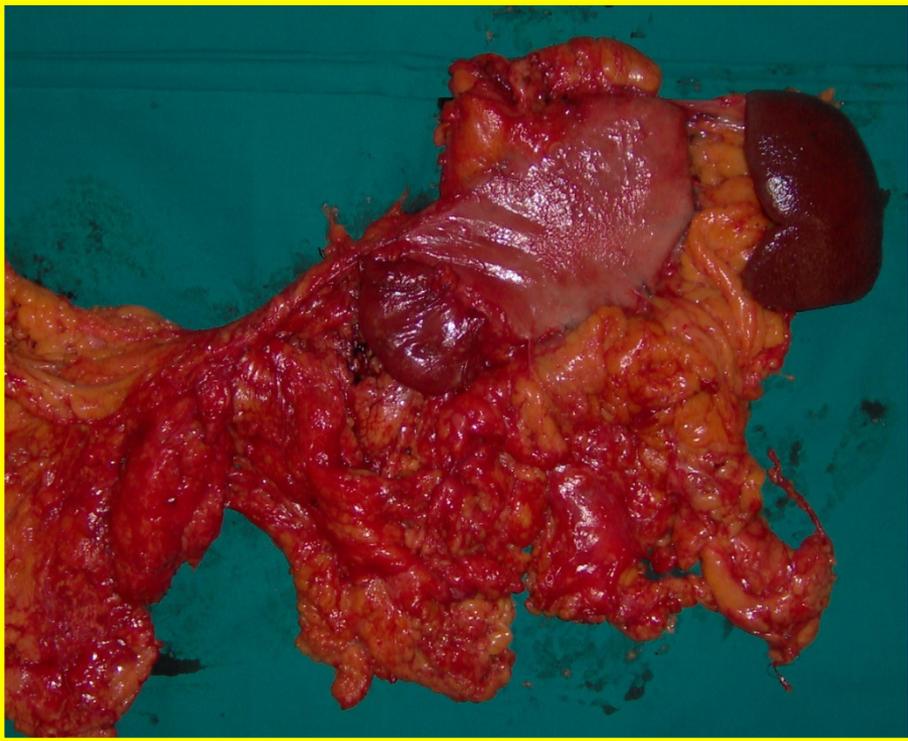
CARCINOSI PERITONEALE



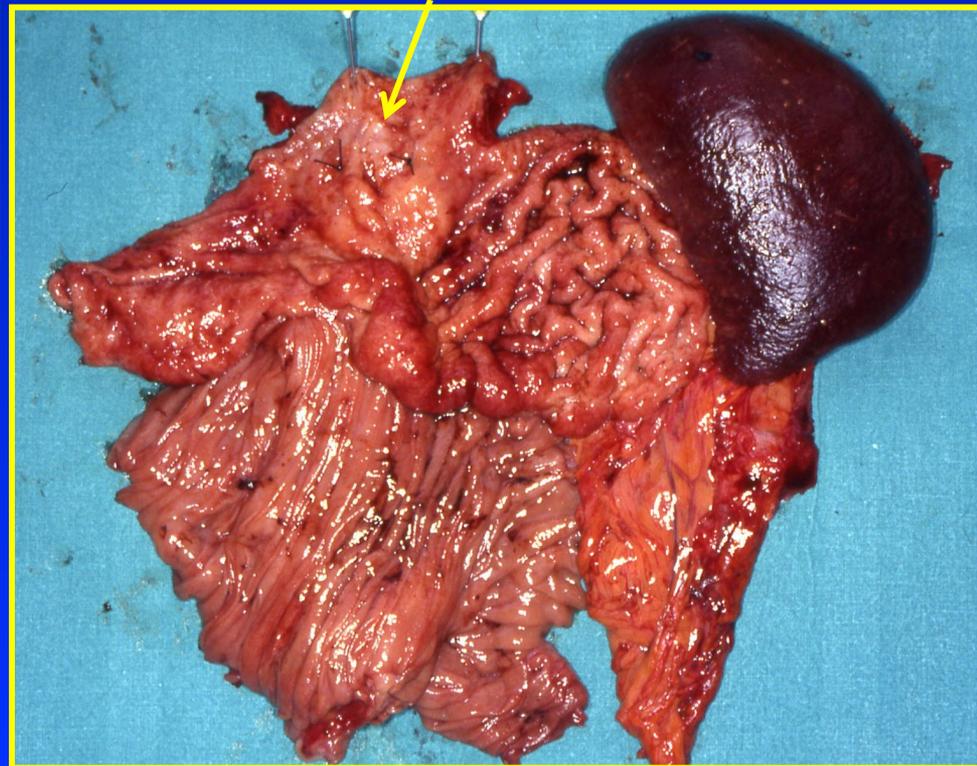
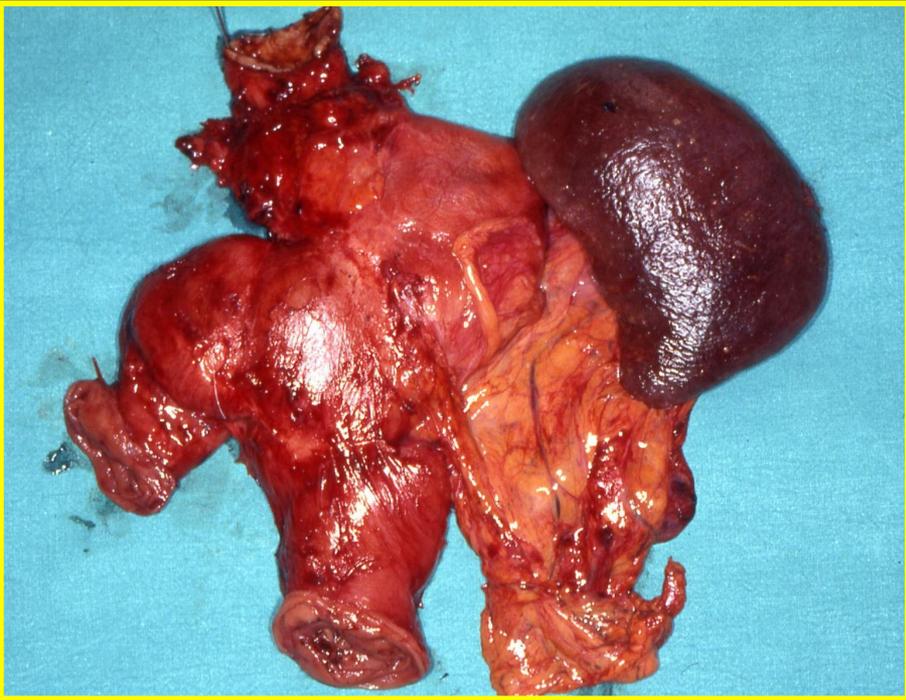
KRUKENBERG



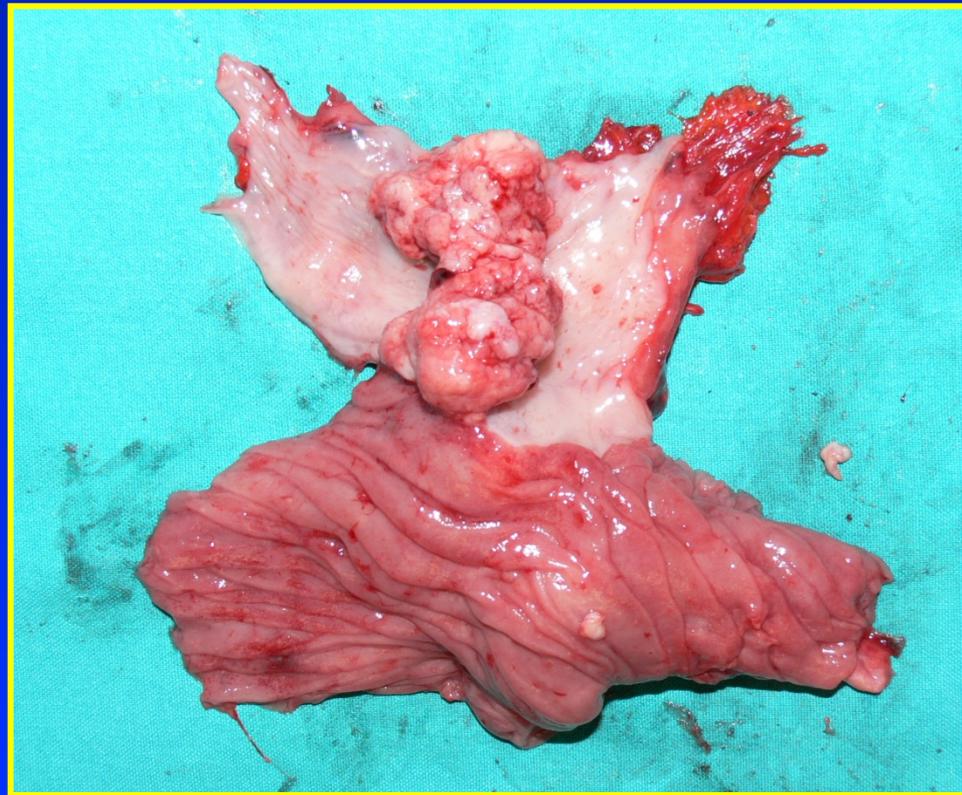
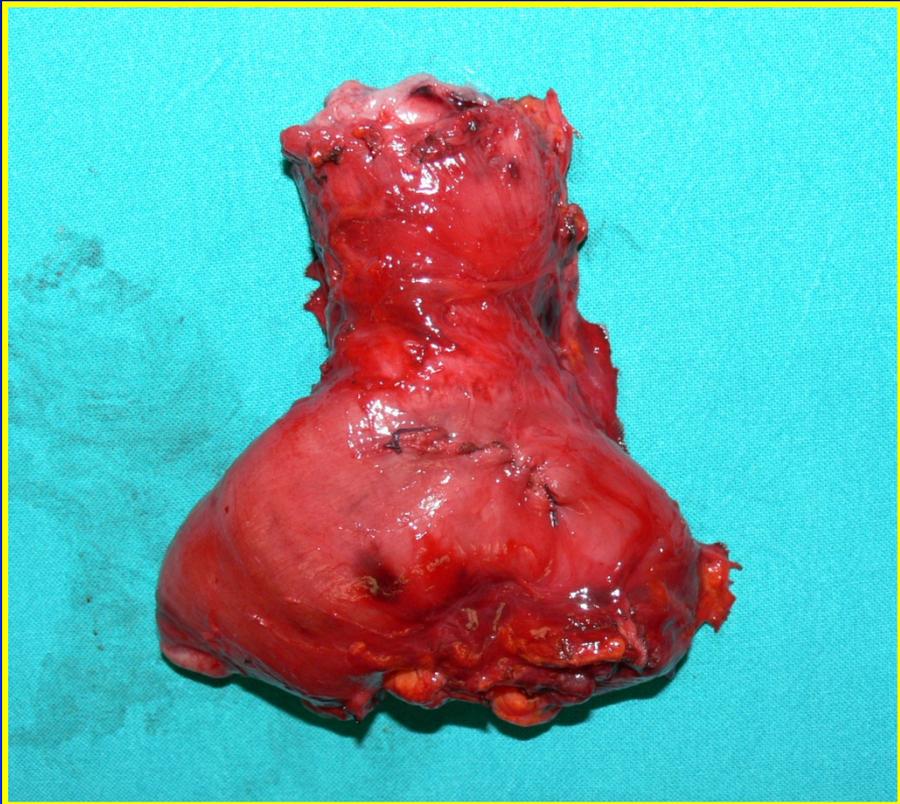
RECIDIVA LOCALE VISCERALE



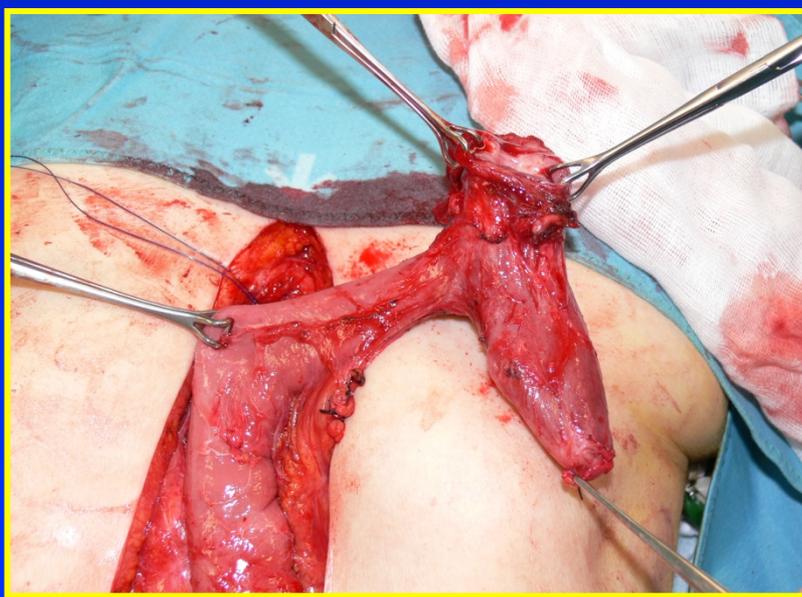
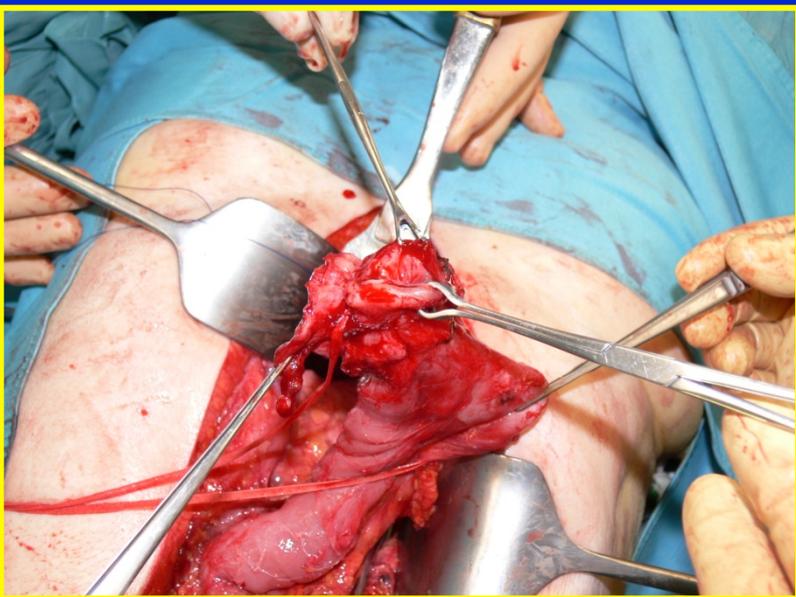
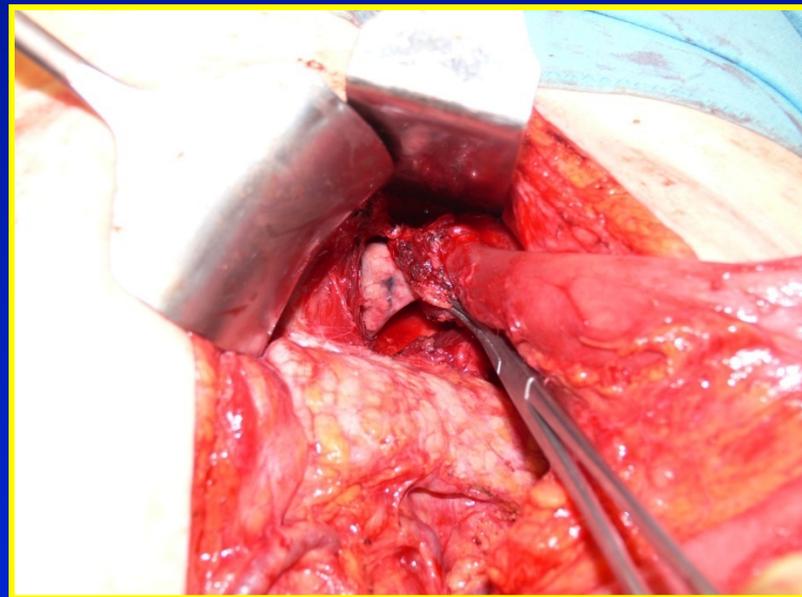
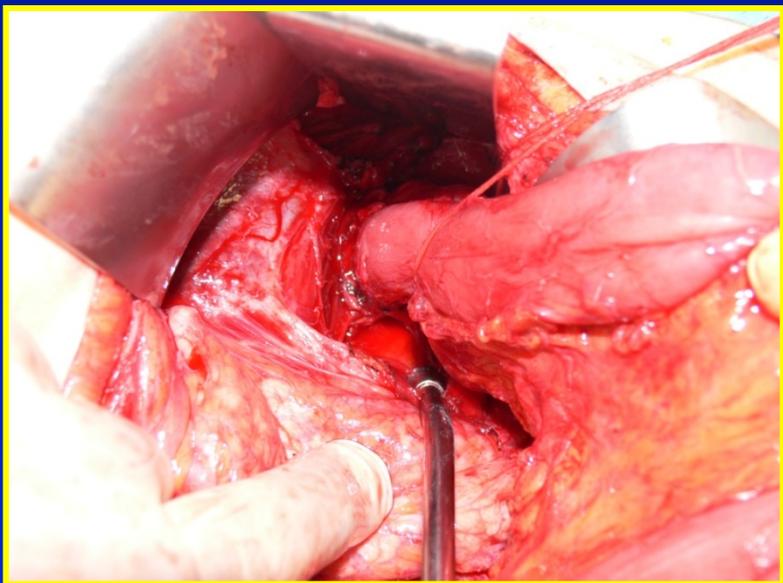
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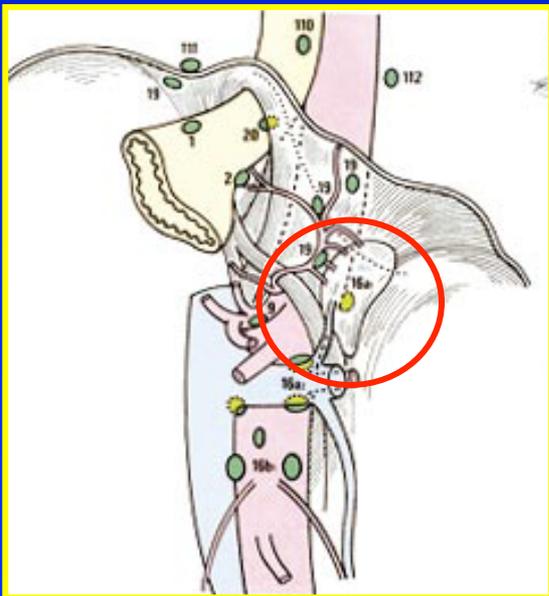
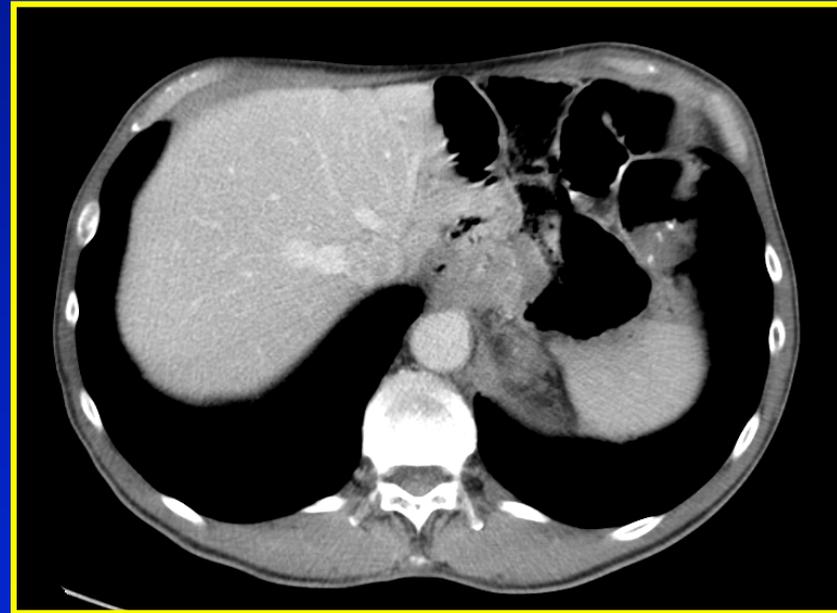
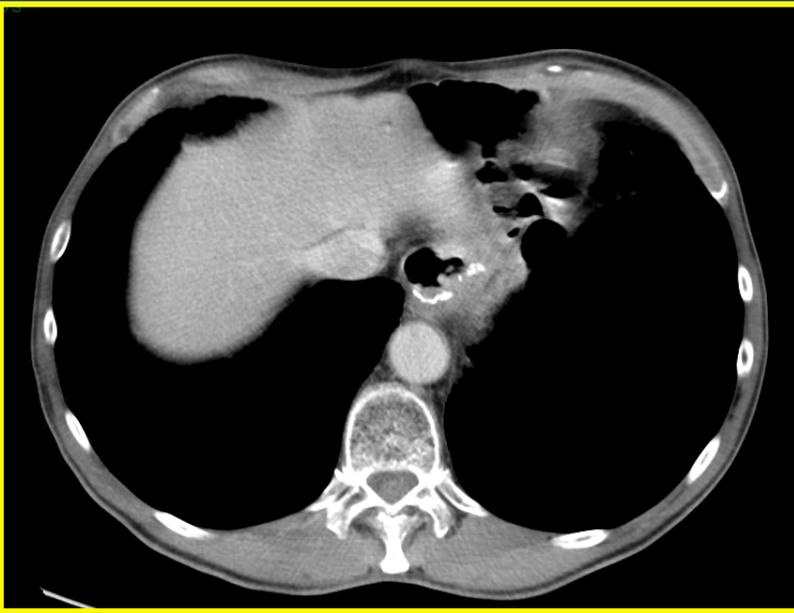
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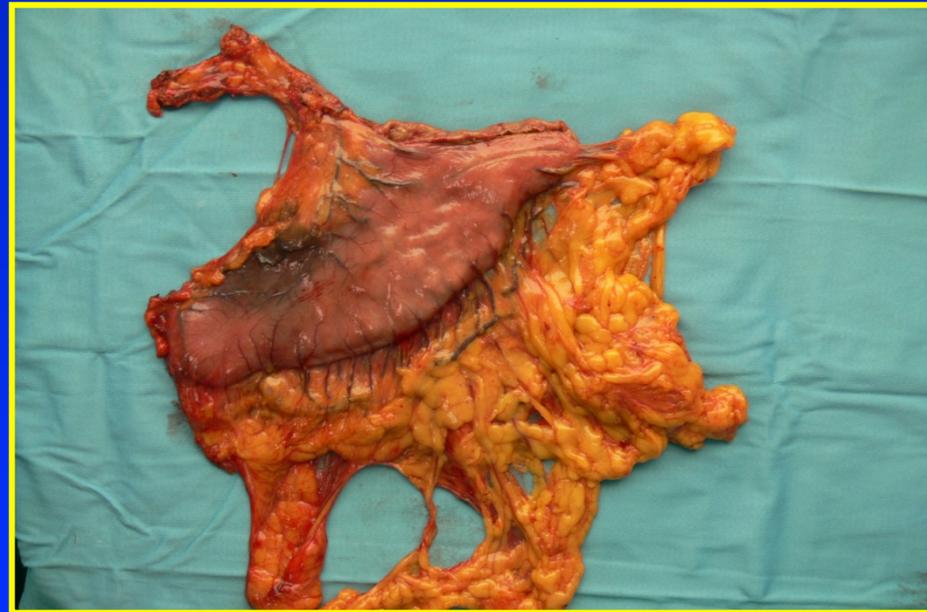
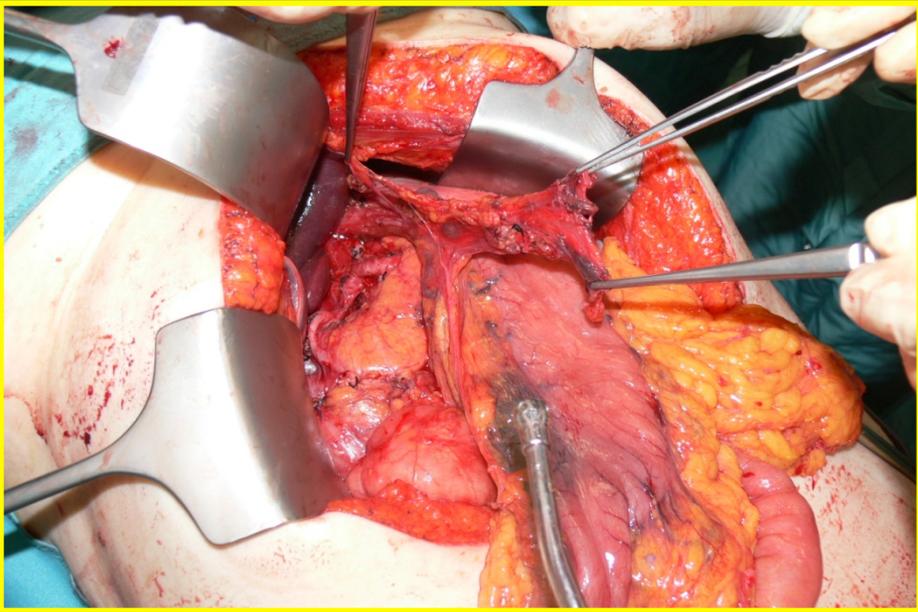
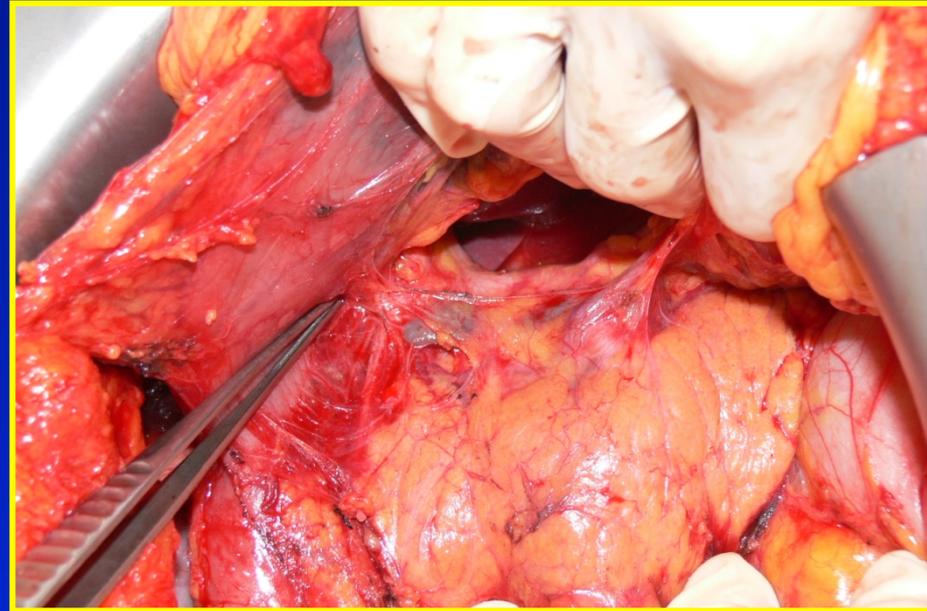
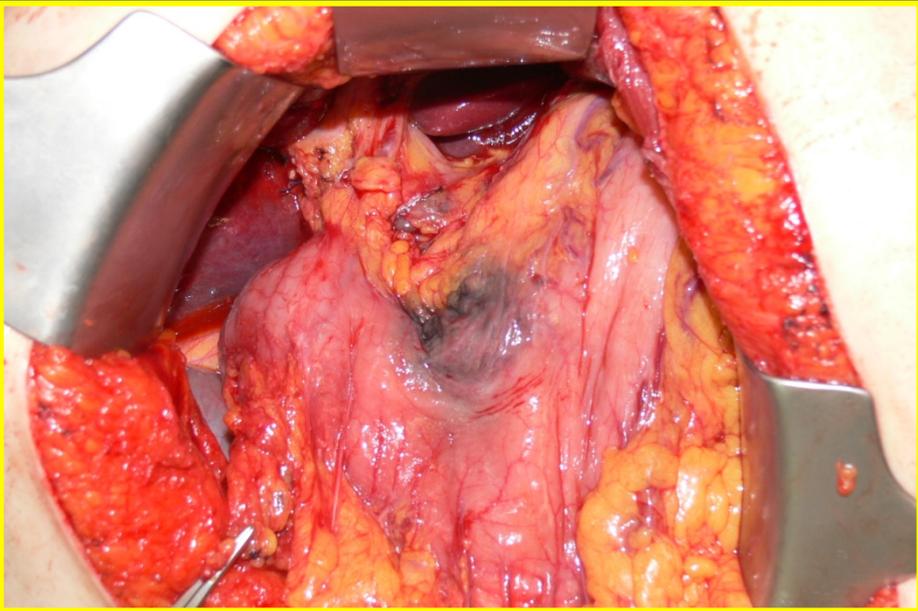
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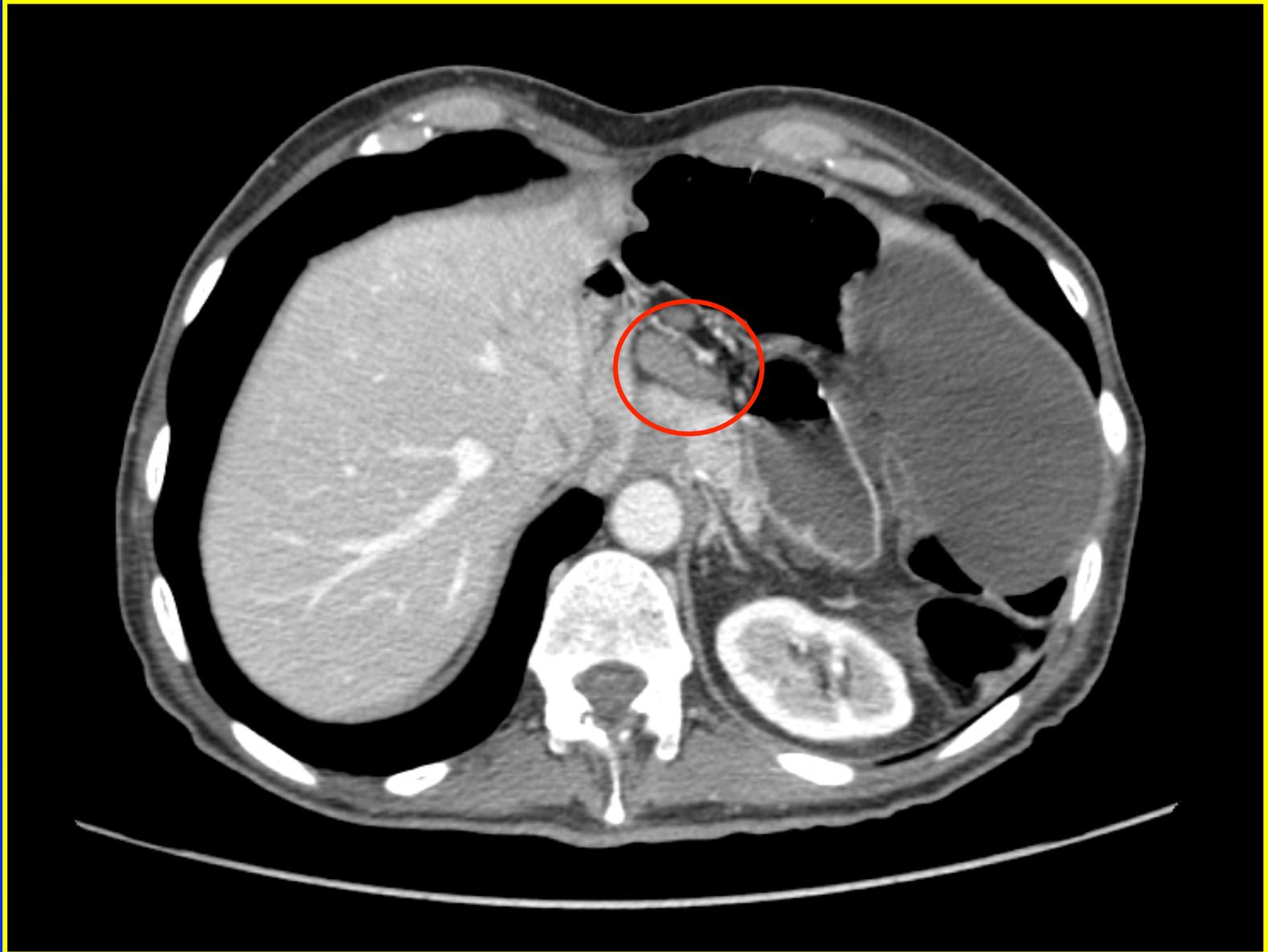
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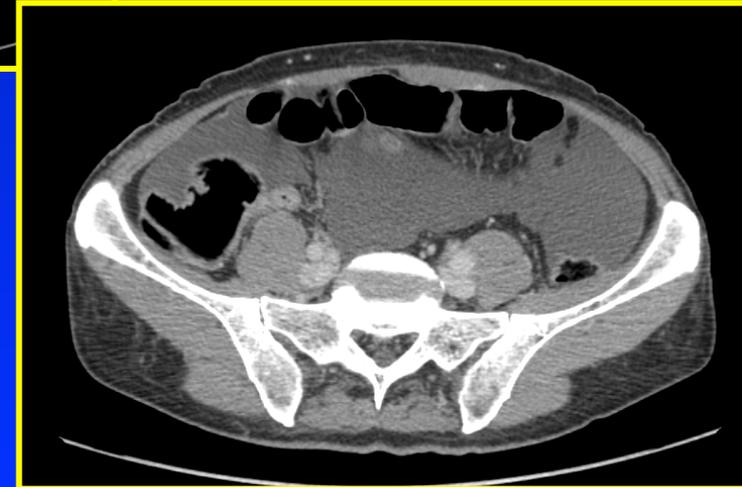
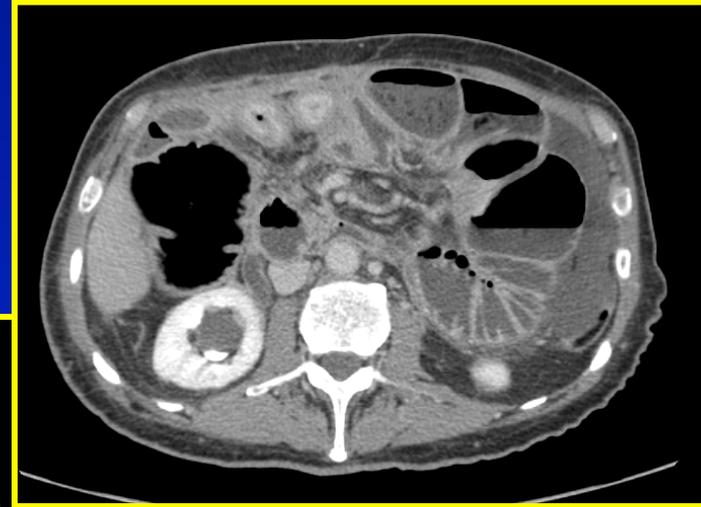
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RECIDIVA LINFONODALE



RECIDIVA RETROPERITONEALE



METASTASI A DISTANZA

