How to treat early gastric cancer

Surgery

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Upper GI surgery at AMC

- 100 oesophagectomies / yr
- 30 resections for gastric cancer / yr
- no endoscopy by surgeons

Debate
Surgery or Endoscopy

- Is there a debate?

- Is surgery better for T1 tumours?

NO

Decisions in treatment for EGC endoscopy vs surgery

- All comes down to
  - chances of lymphatic metastasis
  - comorbidity balance between cure and chances of disseminated disease

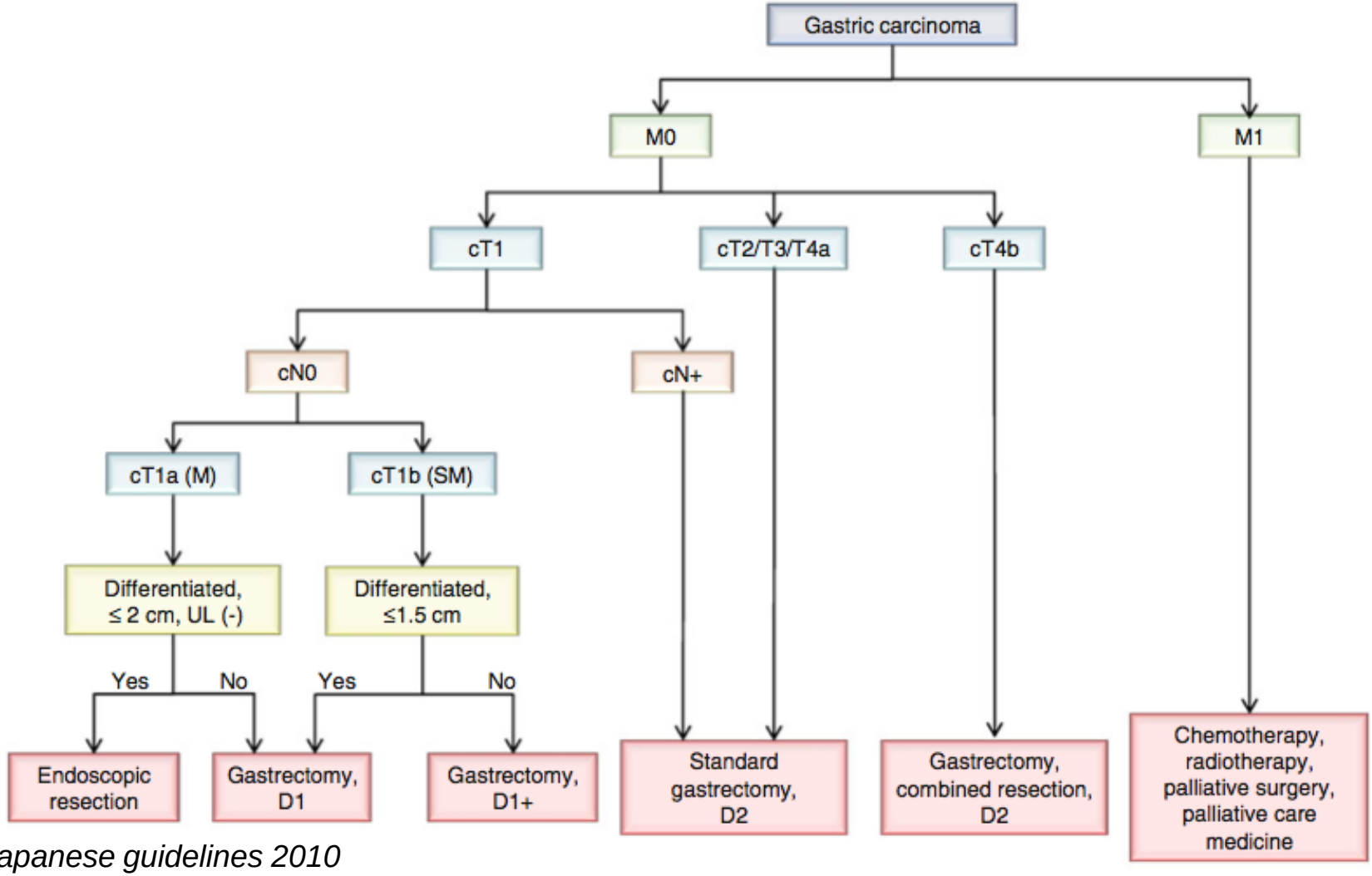
Guidelines in early gastric cancer

Dutch Guidelines - 2009

Japanese Guidelines - 2010

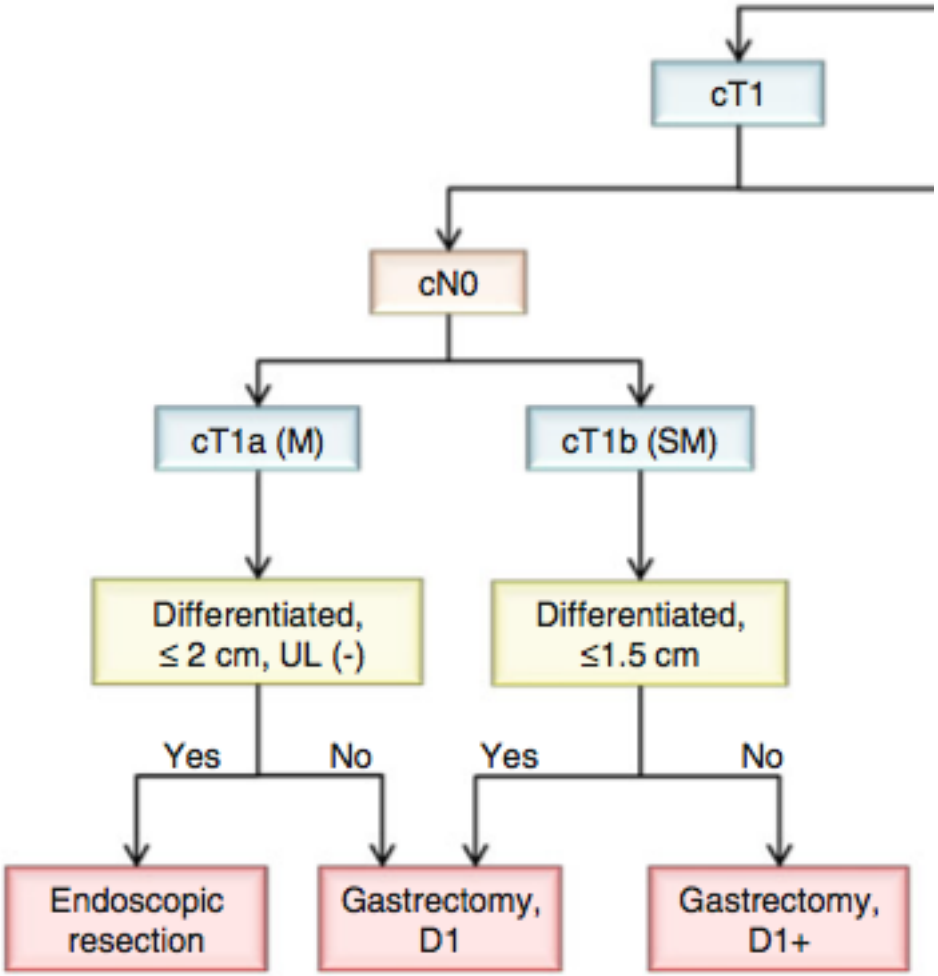
Which patients should undergo surgery?

Japanese Cancer Association
Treatment flow chart EGC



Japanese guidelines 2010

Japanese Cancer Association
Treatment flow chart EGC



Japanese guidelines 2010

Surgery in early gastric cancer
Lymph node metastasis

Chances of lymphatic dissimination in EGC

Tumor	Diameter	Ulceration	No patients	95% CI
Differentiated mucosal	< 3 cm	Yes	0/1230	0-0.3 %
Diffentiated mucosal	Any	No	0/929	0-0.4 %
Differentiated Sm1 (<500um)	< 3 cm	No	0/145	0-2.5%
Undifferentiated mucosal	< 2 cm	No	0/141	0-2.6%
Dutch guidelines 2009				

Dutch guidelines 2009

Surgery in early gastric cancer
Lymph node metastasis

LNN dissection in

sm2 tumors and deeper

but questionable in SM1

definitely not in mucosal tumors

Standard treatment ESD / EMR
In summary

- Clinically diagnosed T1 tumors:
  - < 2cm (size differs between guidelines)
  - Differentiated
  - No ulceration
  - Sm1 and lower
- Treatment within investigational protocols:
  - Differentiated / no ulceration > 2cm
  - Differentiated / ulceration <3 cm
  - Undifferentiated / no ulceration < 2cm

Standard treatment ESD / EMR

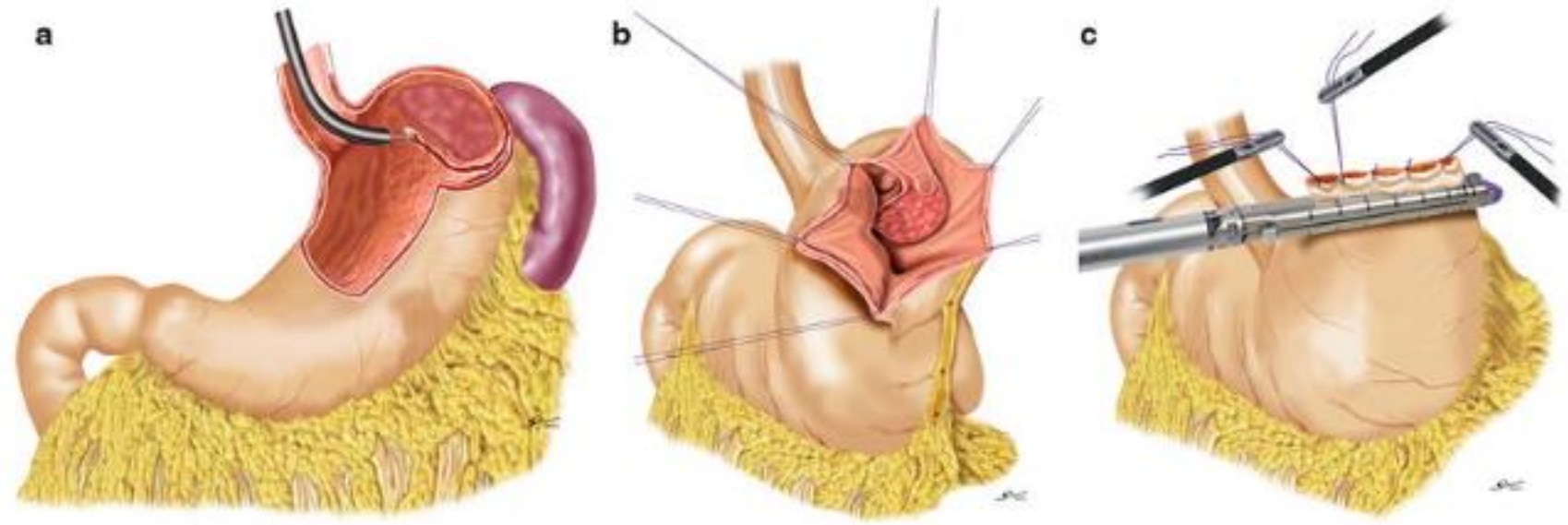
- Clinically diagnosed T1 tumors:
  - < 2cm
  - Differentiated
  - No ulceration

- If ESD / EMR is not technically possible local surgical excision should be undertaken → Local resection

Surgery in early gastric cancer

Surgical therapy

- Local laparoscopic excision



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Surgery in early gastric cancer

Local surgical therapy

- Local gastric excision

- Advantages: smaller resection, low morbidity, faster recovery
- Disadvantages: no lymphadenectomy; indication similar to ESD

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Surgery in early gastric cancer
Local resection

A must for laparoscopic local excision

- Pre operative clipping or staining of the lesion
- Especially important in laparoscopic surgery

Surgery in early gastric cancer
Surgical steps

Extent of resection

Lymphadenectomy

Omentectomy

Surgical technique

Surgery in early gastric cancer
Extent of resection

As defined by stage:

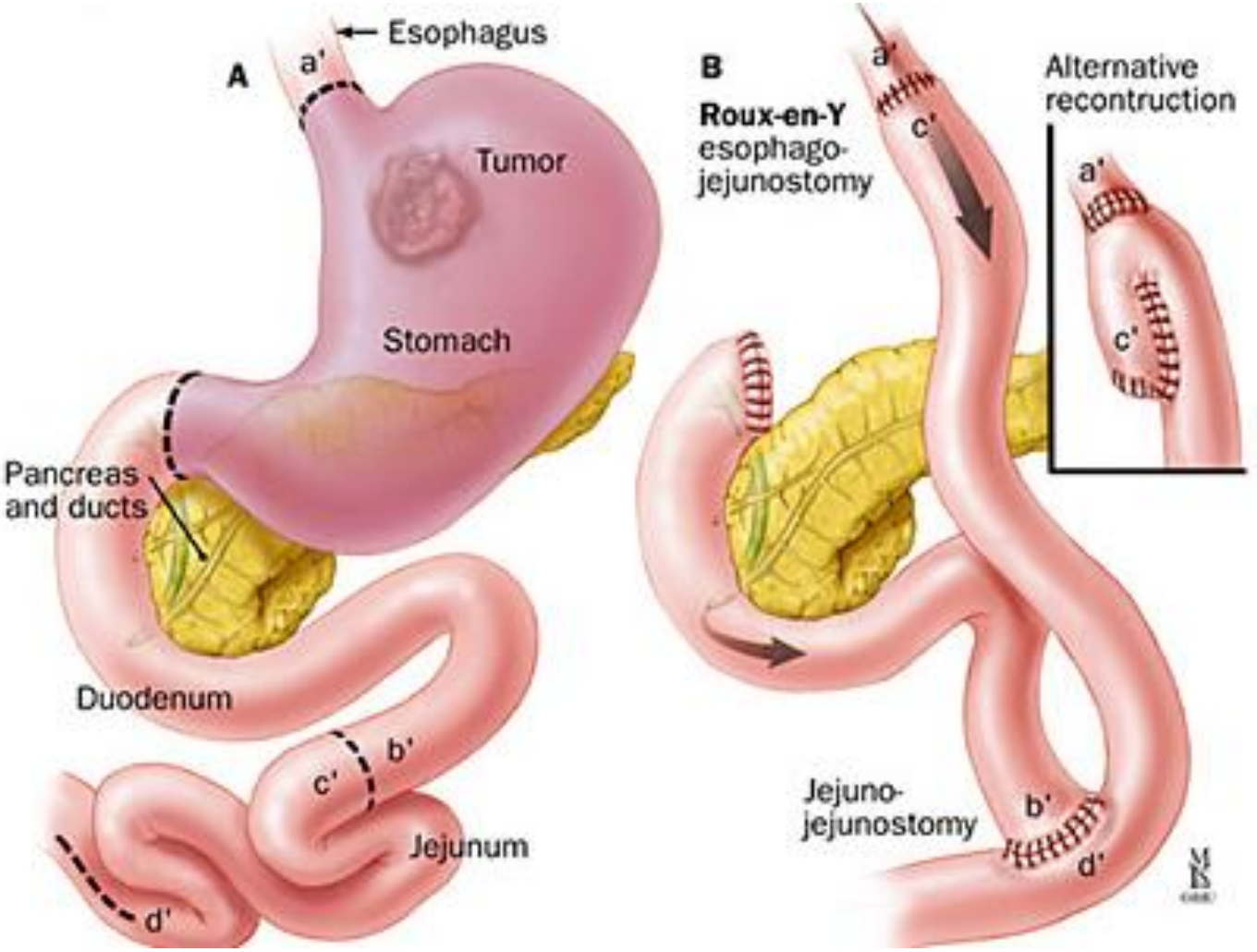
<T1 (sm1 and smaller)

local excision with 2 cm margin

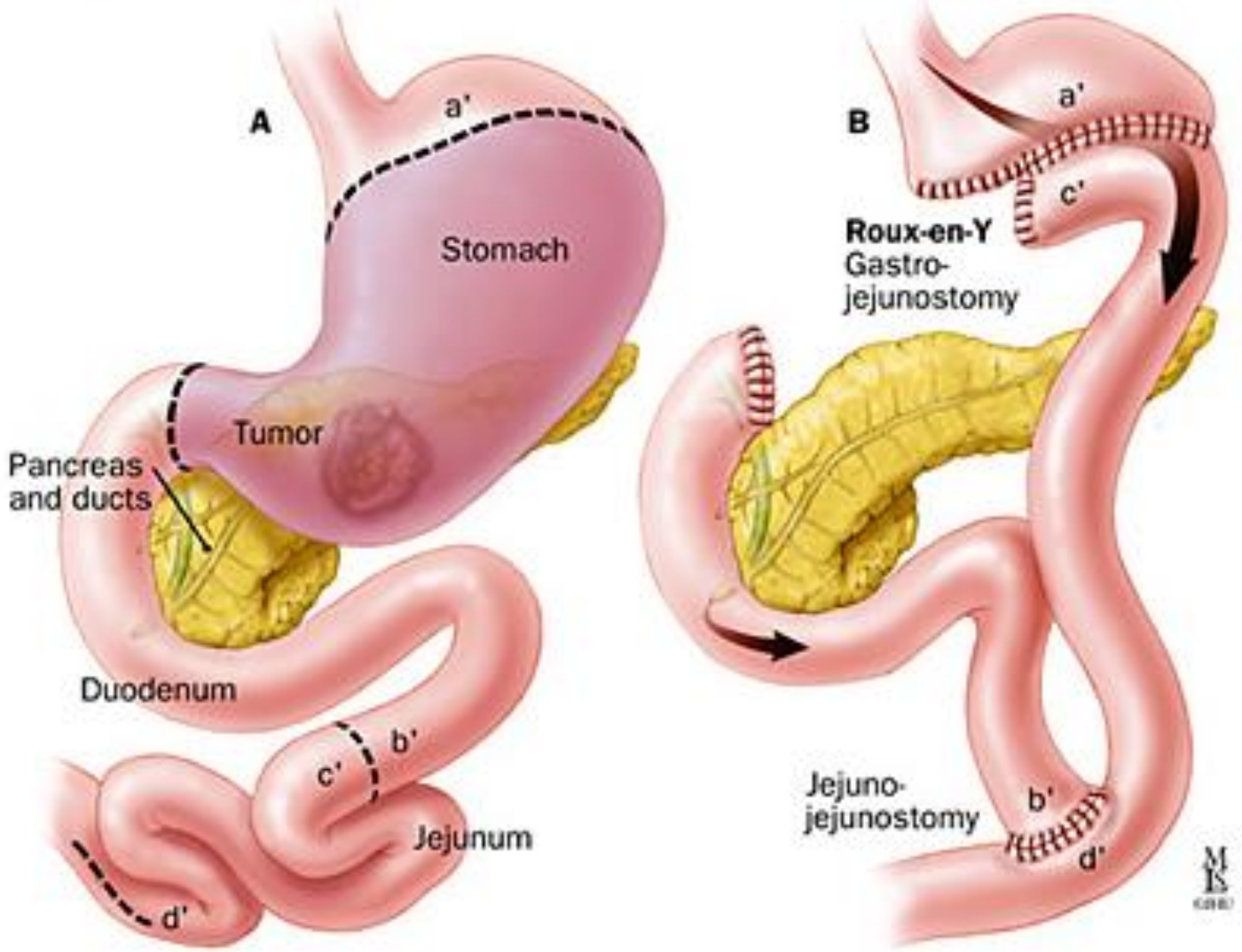
> T1sm1

radical surgery and lymphadenectomy

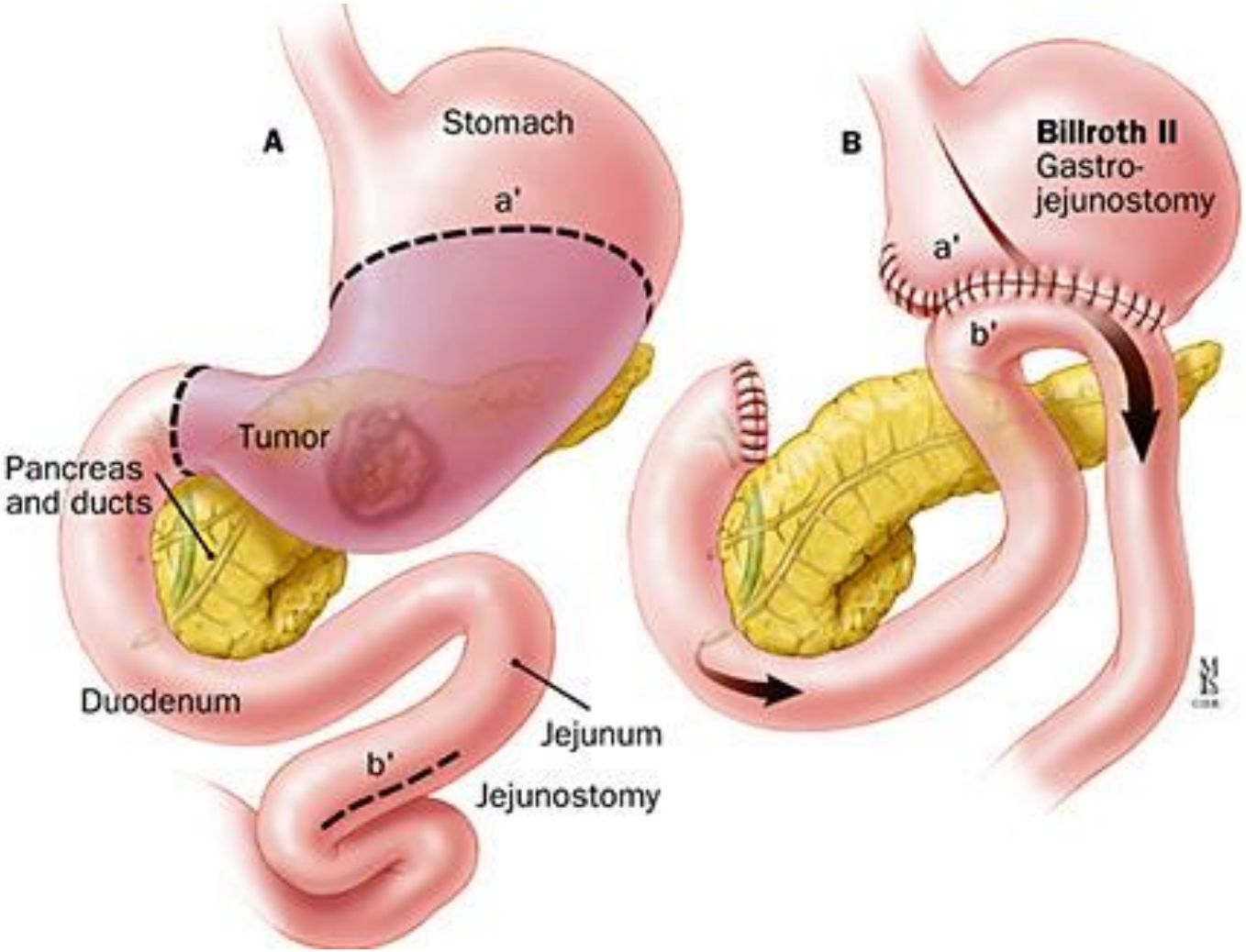
Radical gastrectomy
Total gastrectomy



Radical gastrectomy
Subtotal gastrectomy



Radical surgery
Distal gastrectomy



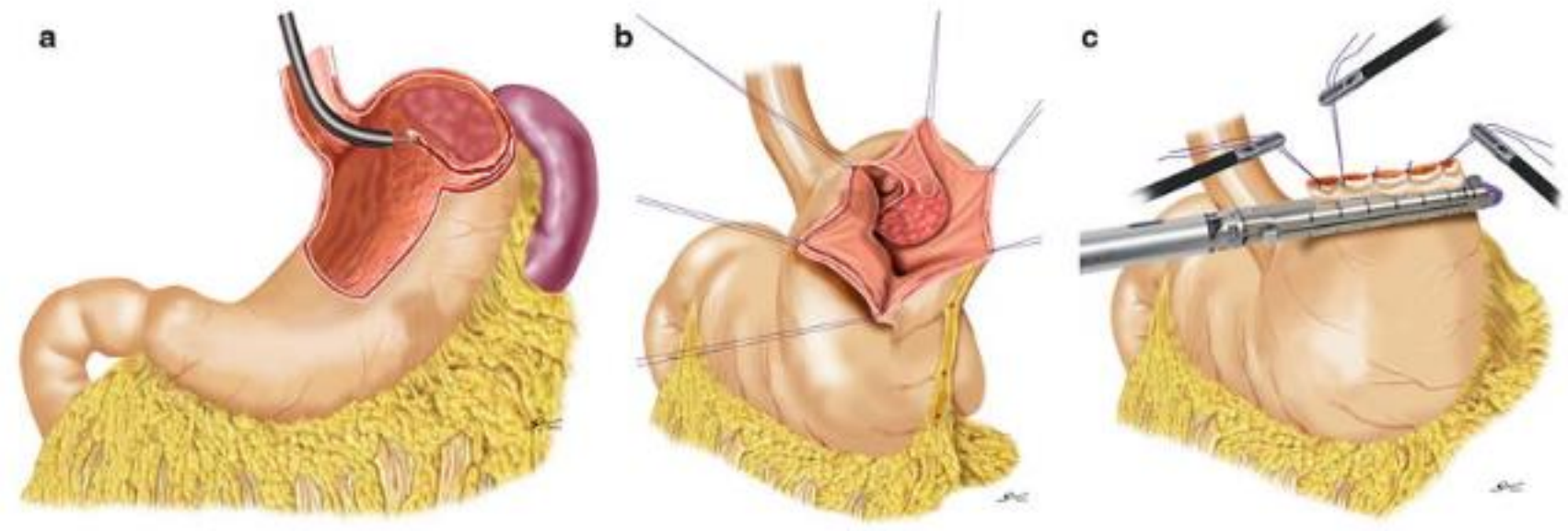
Radical gsatric surgery
= *major surgery*

- 2011 in hospital mortality for gastric resection was 6 %
- 2012 4 % (more centralization)

Other surgical techniques in early gastric cancer

Surgical therapy

- Local excision



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Other surgical techniques in early gastric cancer

- Surgical therapy

Local gastric excision

- Advantages: smaller resection, low morbidity, faster recovery
- Disadvantages: no lymphadenectomy; indication similar to ESD

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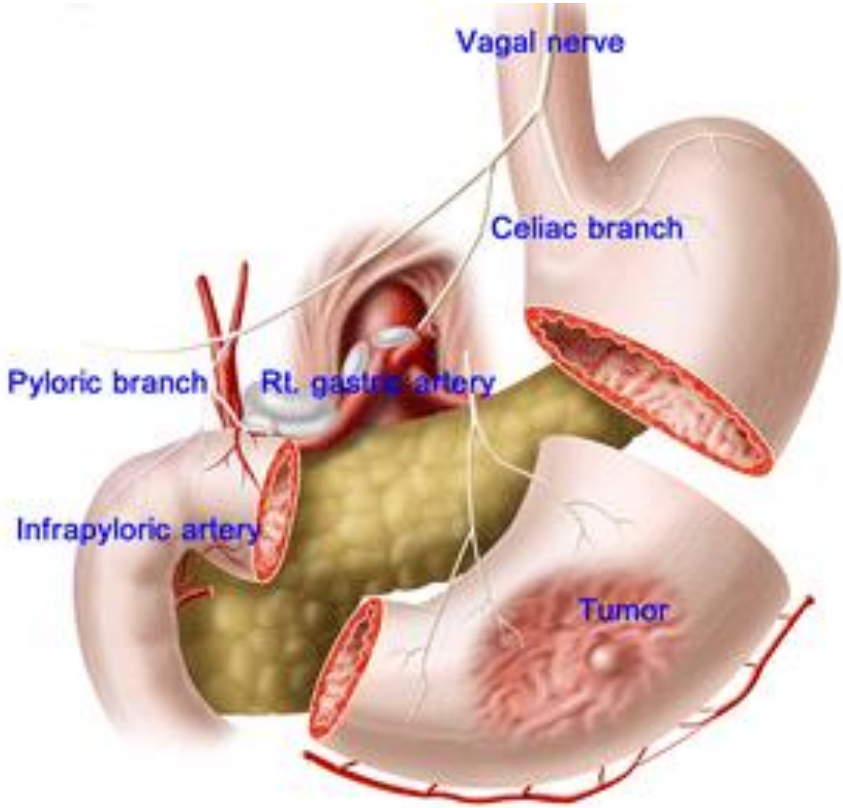
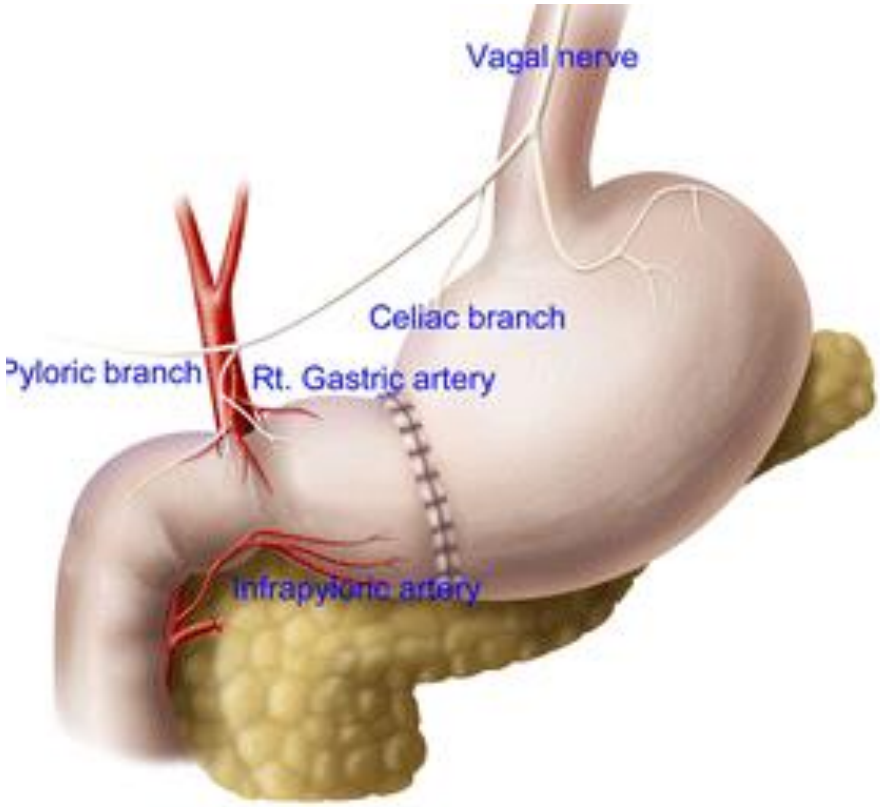
Other surgical techniques in early gastric cancer

Surgical therapy

-pylorus preserving gastrectomy





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Other surgical techniques in early gastric cancer

Surgical therapy

-pylorus preserving gastrectomy

Advantages: presumed retained gastric function; formal lymphadenectomy (D1+, D2)

Disadvantages: extensive procedure, morbidity

Peri pyloric lymph nodes stay behind

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Surgical techniques in early gastric cancer

Surgical therapy

-proximal gastrectomy

Advantages: presumed retained gastric function; formal lymphadenectomy (D1+, D2)

Disadvantages: extensive procedure, morbidity

Distal lymph nodes stay behind

Surgery in early gastric cancer
Lymphadenectomy

T1 sm1 and less

no formal lymphadenectomy

> T1sm1

lymphadenectomy

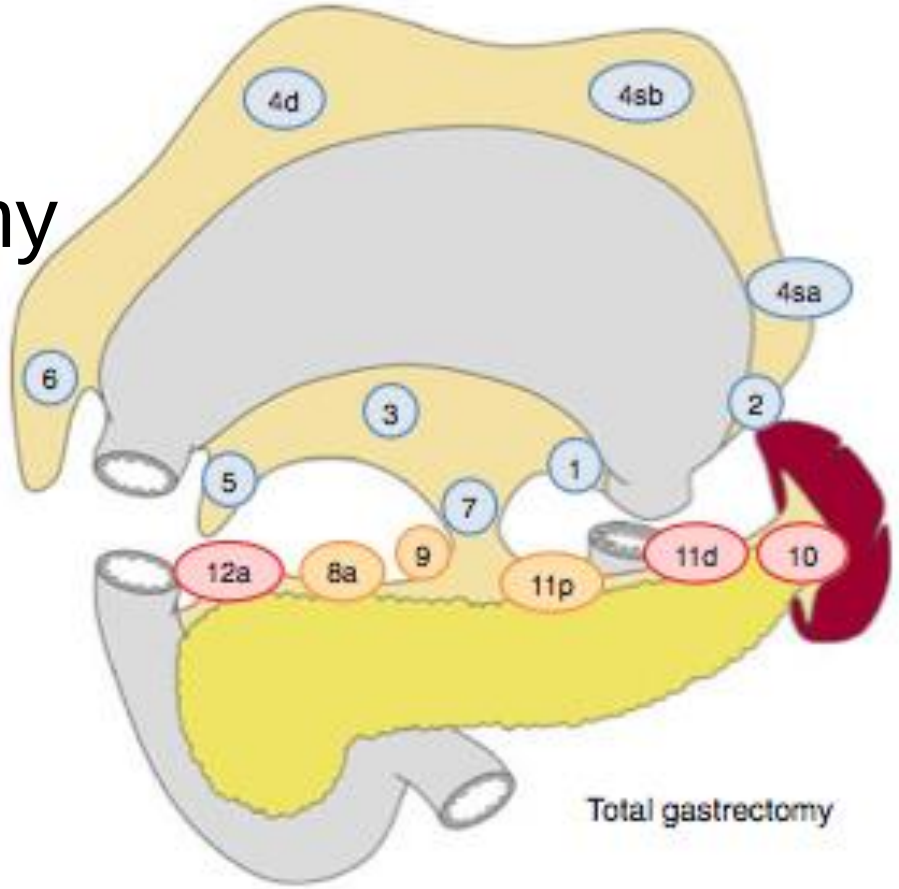
D1+ / D2 for T1N0 tumors

D2 for TxN+ tumors

Surgery in early gastric cancer
Lymphadenectomy

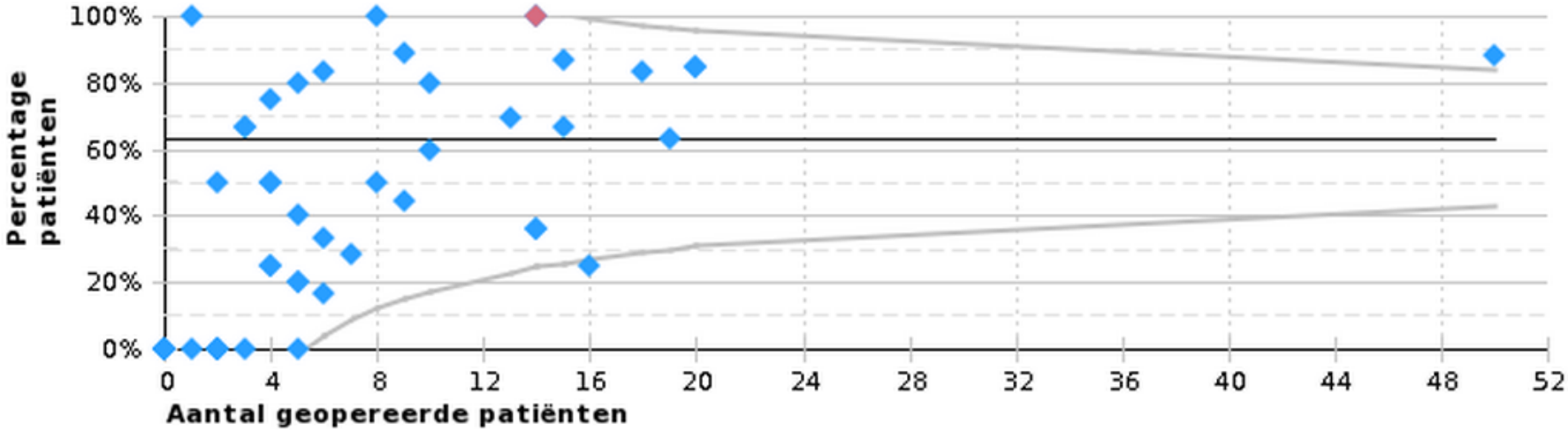
D2 lymphadenectomy

Standard of care



D0: Lymphadenectomy
D1: Nos. 1–7
D1+: D1 + Nos. 8a, 9, 11p
D2: D1 + Nos. 8a, 9, 10, 11p, 11d, 12a.

Dutch upper GI clinical Audit
No of lymph nodes resected > 15



Figuur 17: Ziekenhuisverschillen in het percentage patiënten, dat een in-opzet-curatieve (macroscopisch radicale) resectie ondergaat vanwege primair maagcarcinoom, met 15 of meer lymfeklieren in het resectiepreparaat

Clinicalaudit.nl

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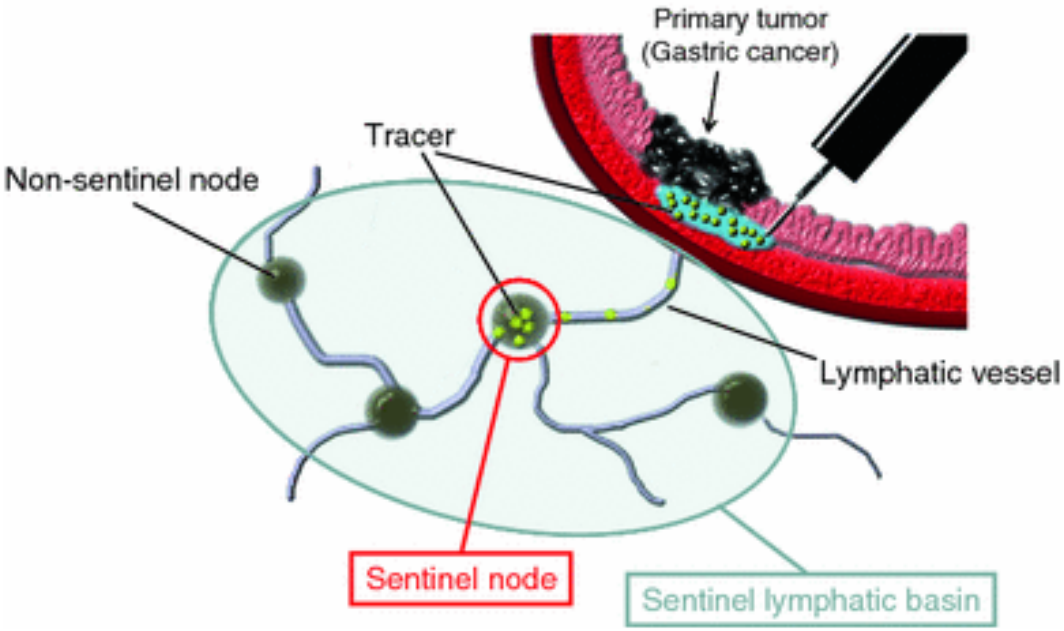
Surgery in early gastric cancer
Lymphadenectomy or Sentinel Node

A number of studies have shown feasibility



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Surgery in early gastric cancer
Lymphadenectomy or Sentinel Node

Authors	Year	Journal	Tracers	Injection	No. of patients	SN detection rate (%)	Sensitivity (%)	Accuracy (%)
Tajima Y et al.	2009	Ann Surg	ICG + FI (intraoperative injection)	SS	25	92	40	74
Tajima Y et al.	2009	Ann Surg	ICG + FI (preoperative injection)	SM	31	100	100	100
Ohdaira H et al.	2009	Dig Surg	ICG + IREE	SM	14	100	67	93
Kelder W et al.	2010	Eur J Surg Oncol	ICG + IREE	SM	212	99.5	97	99.5
Rabin I et al.	2010	Gastric Cancer	Patent blue	SS	80	76	85	90
Miyashiro I et al.	2011	Surg Endosc	ICG + FI	SM	10	100	100	100
Park DJ et al.	2011	Ann Surg Oncol	ICG + Tc-99m antimony sulfur colloid	SM	68	91	100	100

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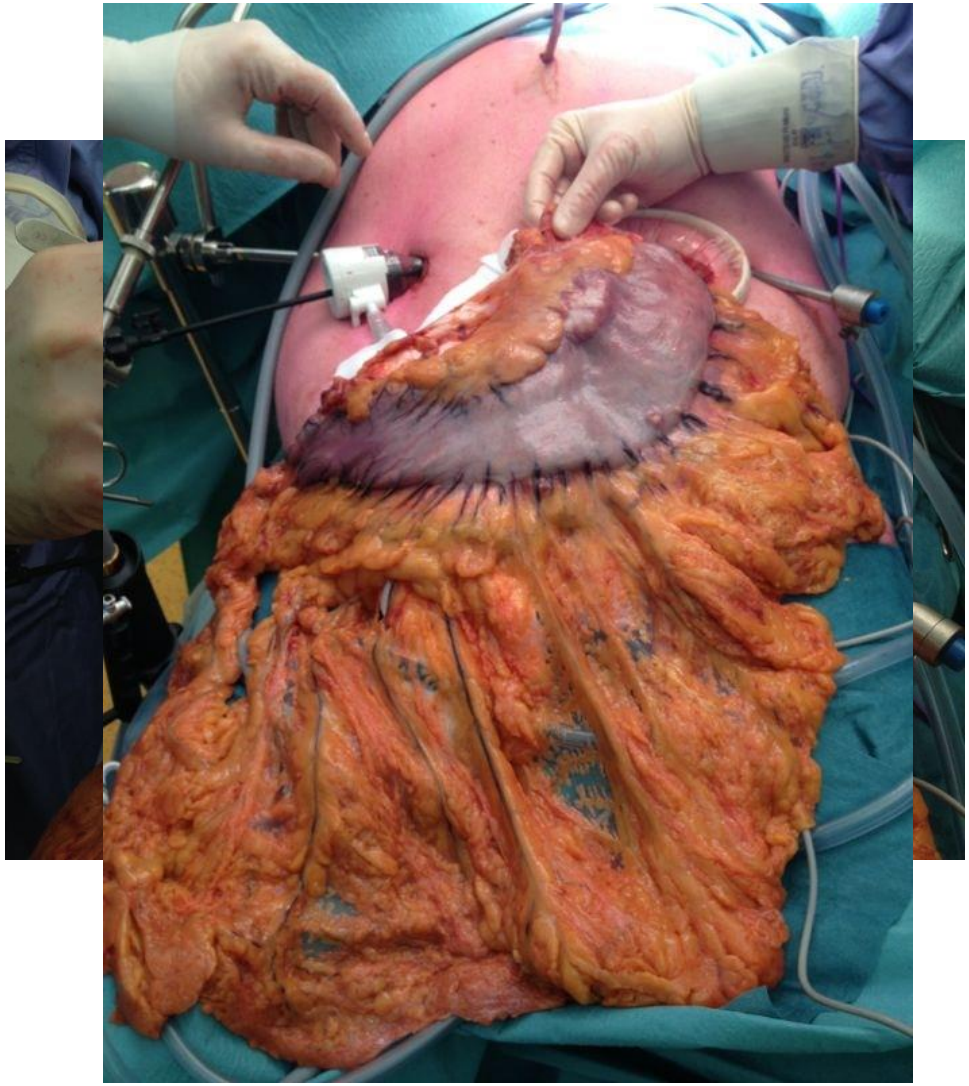
Surgery in early gastric cancer
Omentectomy

In case of T3-T4 tumors omentectomy is standard of care

In T1 tumours only resection of 3 cm of the omentum adjacent to the gastro epiploic arcade

Japanese guidelines 2010

Surgery in early gastric cancer
Omentectomy



Surgery in early gastric cancer *conclusions*

- EMR / ESD is standard of care in diffentiated small non ulcerative lesions
- For lesions > 2cm or < 2cm with ulceration or for undifferentiated lesions endoscopic resection in investigational protocols is feasible
- Resectional specimen can be used to choose final therapy

Surgery in early gastric cancer *conclusions*

- Local surgical resection only in patients in whom EMR / ESD is not technically possible
- In differentiated small lesions no formal lymphadenectomy is necessary.
- In lesions > sm1 a formal lymphadenectomy has to be performed. Preferrable D2

Thank you!