

Diagnostic Work Up for Gastric Cancer

Dr. Trevor D Hamilton

BC Cancer Surgeon Network Fall Update

October 5, 2019

Disclosure



I have nothing to disclose

Objectives



1. Define the role of diagnostic laparoscopy in gastric cancer
2. Review utility of endoscopic ultrasound for regional staging
3. Review indications for nuclear medicine imaging

Endoscopy

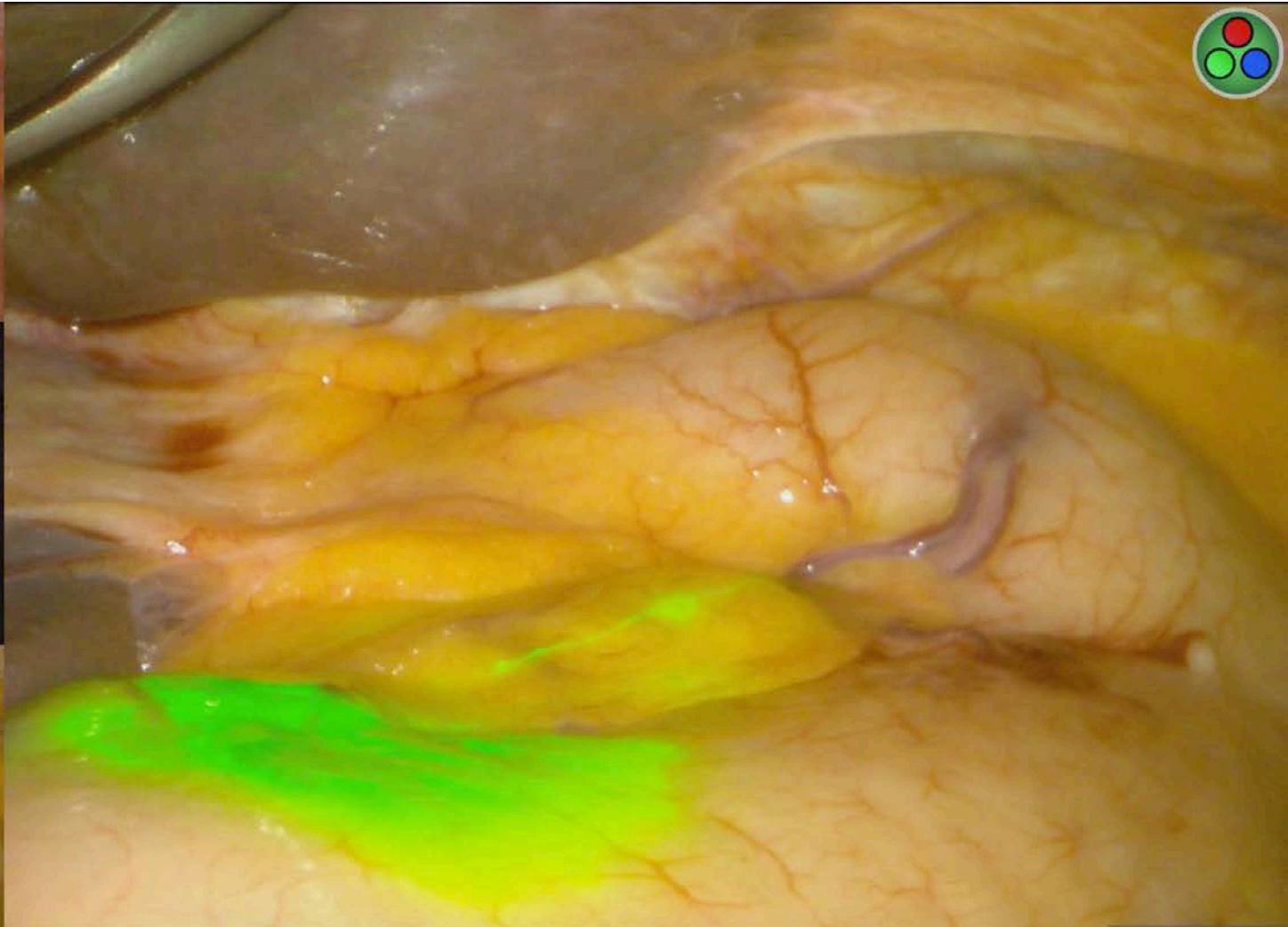
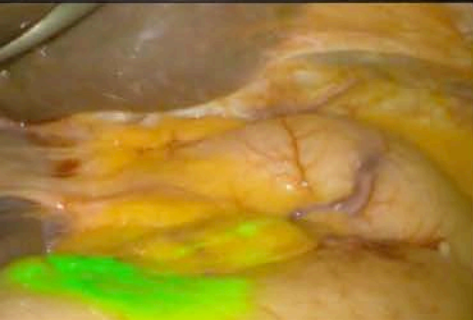


Location

Location

Location

Endoscopy



Endoscopy



Beware linitus...

Diffusely infiltrative GC

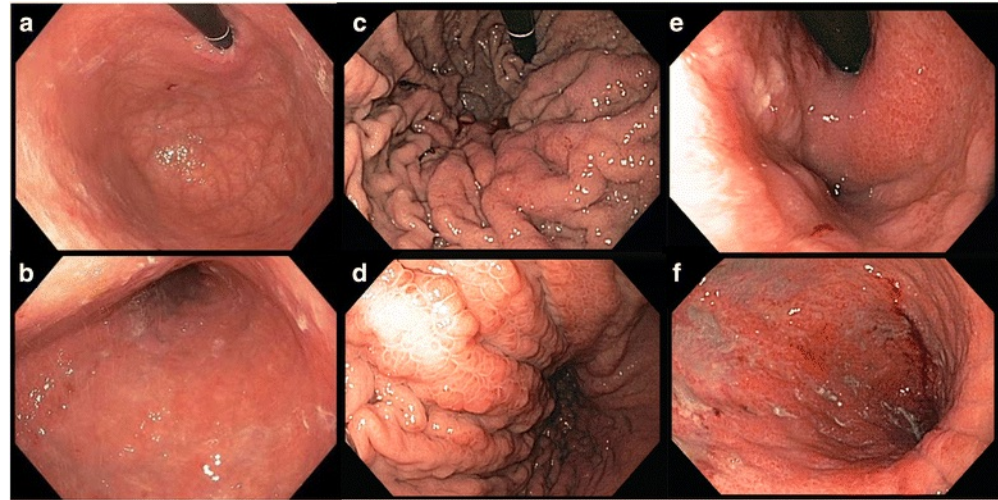
Borrmann type IV

No discrete mass

Thickened rugae

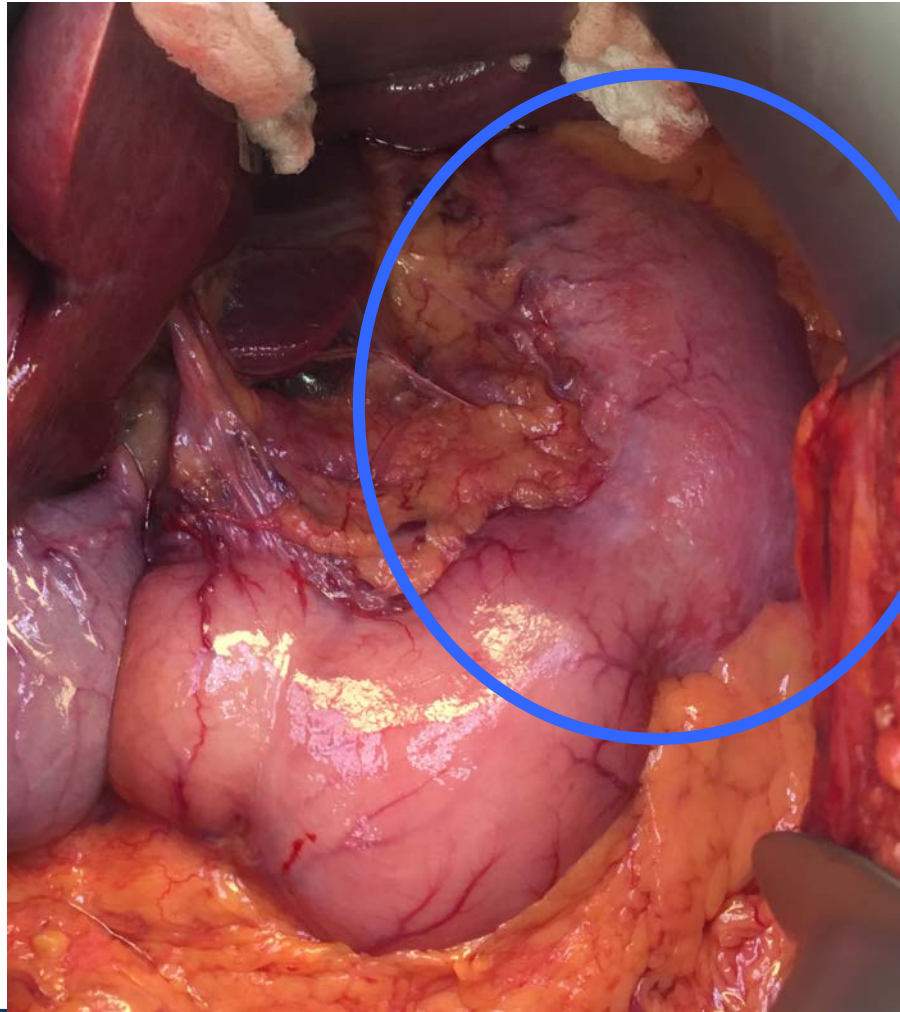
Poorly distensible stomach

“Gastritis” multiple biopsies



Agnes et al. 2017 *World J Surg Onc*

Infiltrative



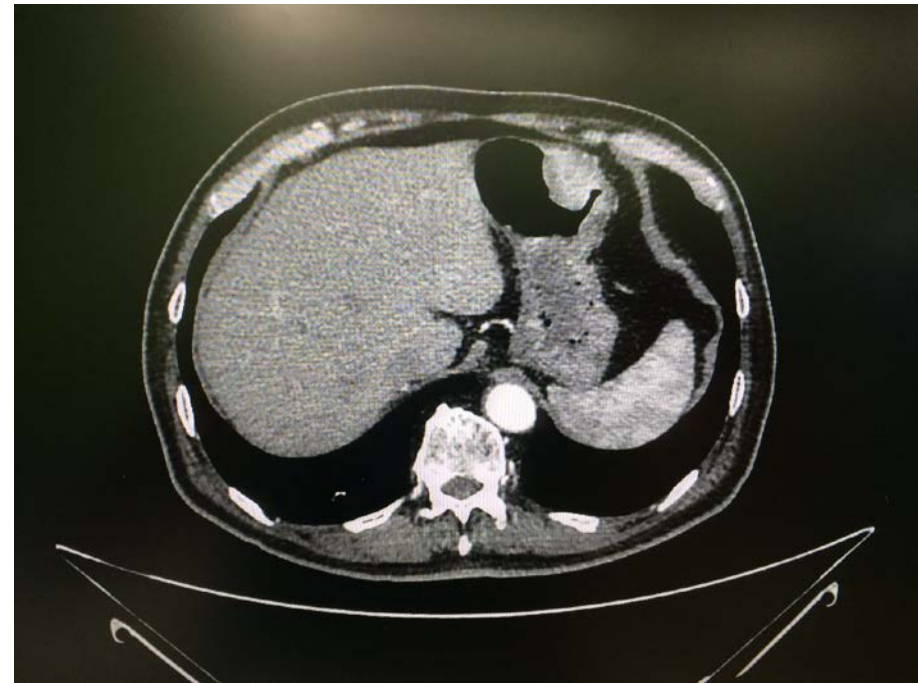
Imaging



CT chest/abd/pelvis
(gastric protocol)

Triphasic CT

Ingestion of water
immediately before

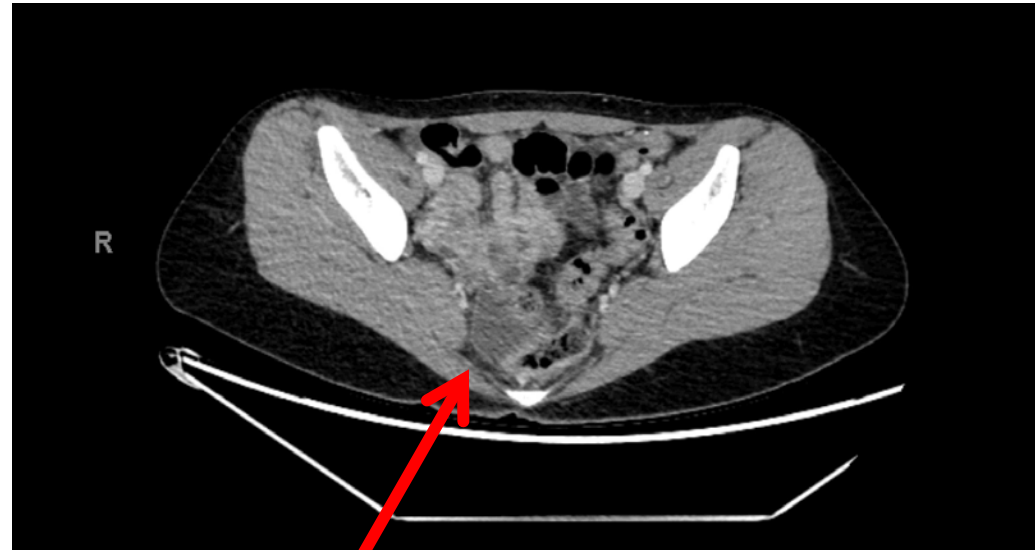


Imaging



Concerning features:

- Trace ascites
- Subtle nodularity
- “Retroperitoneal” nodes
- Stranding

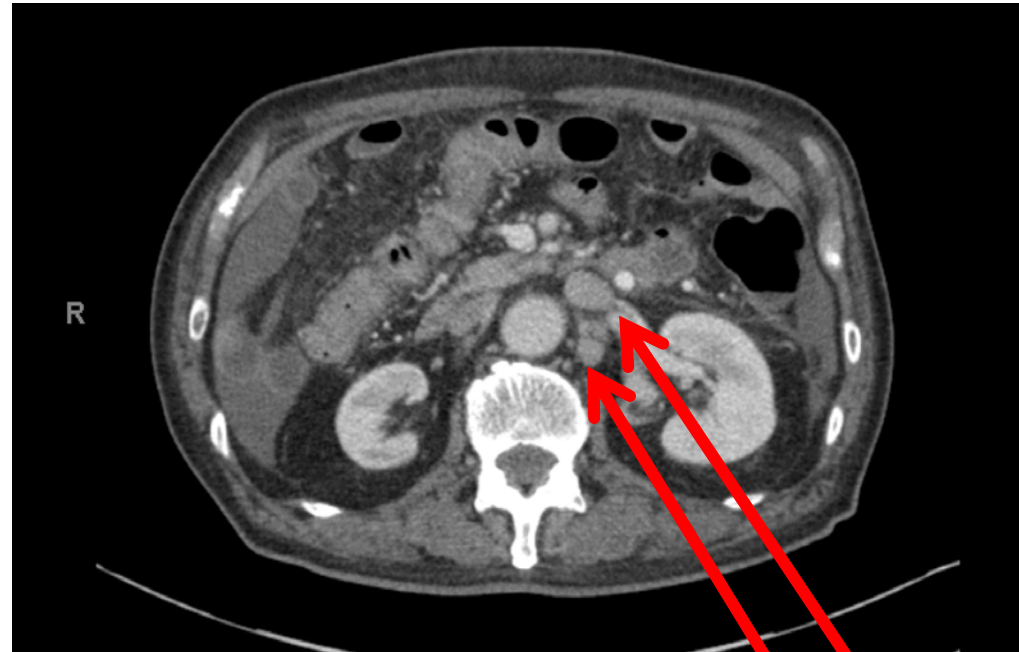


Imaging



Concerning features:

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Imaging



Concerning features:

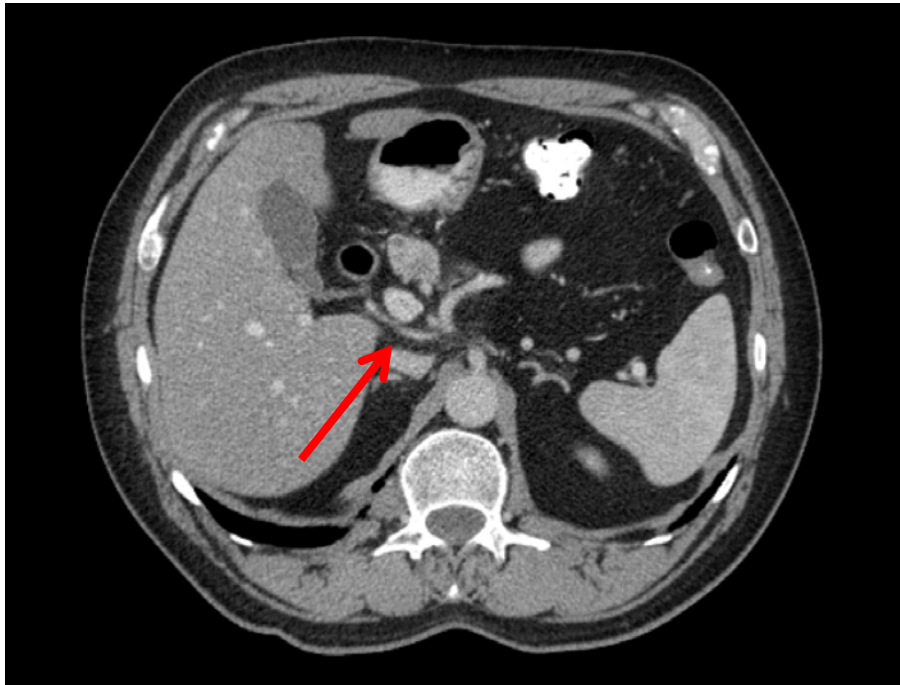
- Trace ascites
- Subtle nodularity
- “Retroperitoneal” nodes
- Stranding



Imaging



Aberrant hepatic anatomy



PET



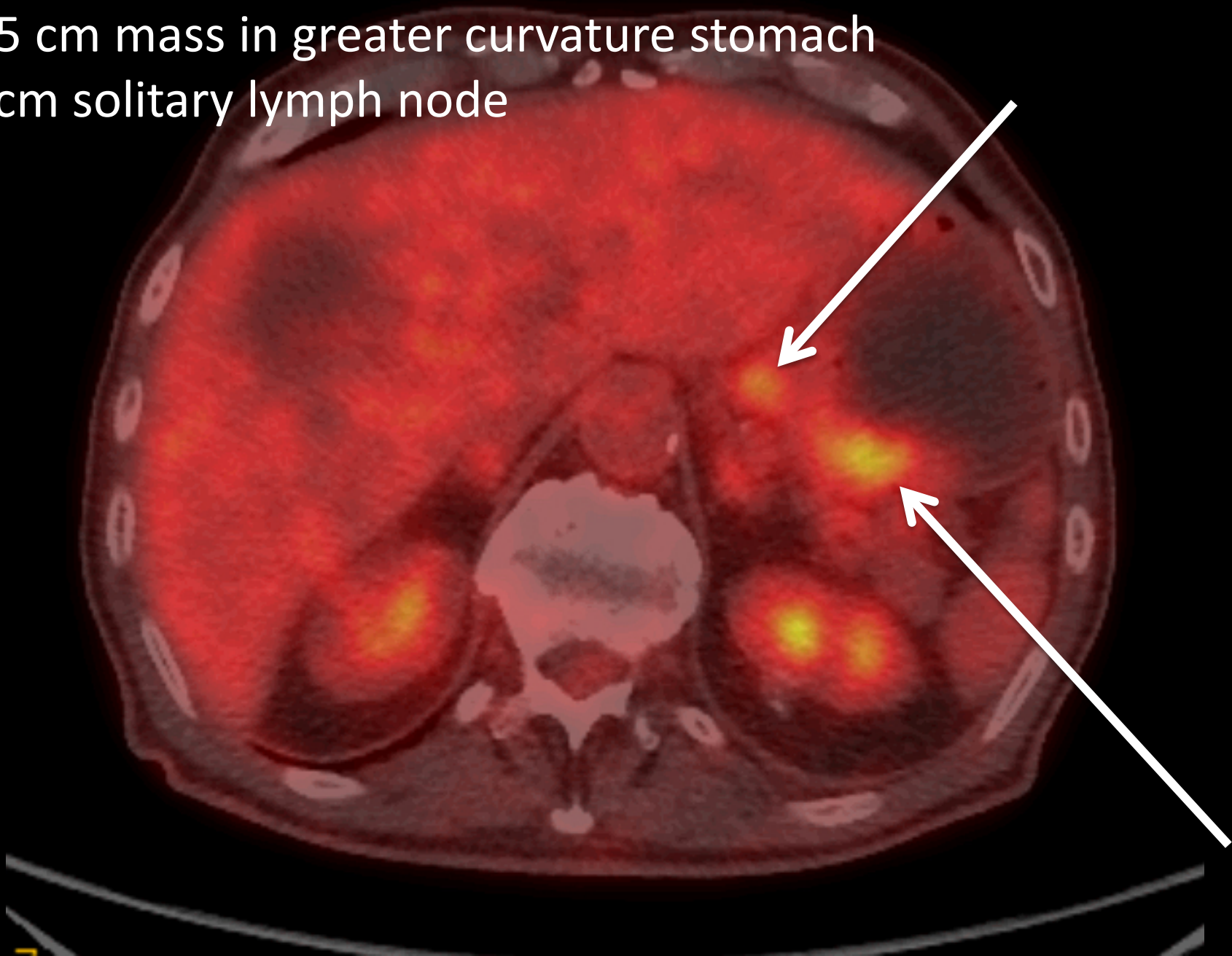
Not routinely recommended (*excluding GEJ)



PET/CT has low detection rate because of low tracer accumulation in diffuse and mucinous tumors which are frequent in gastric cancer

Stahl et al. 2003 Eur J Nucl Med Mol Imaging

1.5 cm mass in greater curvature stomach
1 cm solitary lymph node



Synoptic Report:

SPECIMEN

- Total gastrectomy; Stomach, Distal esophagus, and Proximal duodenum

TUMOUR

- Tumour Site: Fundus
- Area of Fundic Involvement: Posterior wall
- Tumour Size: 8.3 x 4.5 x 2.5 cm
- Histologic Type: Adenocarcinoma
- Lauren Classification of Adenocarcinoma: Diffuse type (signet-ring carcinoma if >50% signet-ring cells)
- Histologic Grade: G3: Poorly differentiated
- Microscopic Extent of Tumour: Tumour penetrates to the surface of the visceral peritoneum (serosa) AND directly invades adjacent structures - tumour superficially invading the distal pancreas and extending to the posterior serosal surface of the stomach
- Lymph-Vascular Invasion: Present
- Perineural Invasion: Present

MARGINS

- Proximal Margin: Negative for invasive carcinoma, carcinoma in situ, and low-grade glandular dysplasia
- Distal Margin: Negative for invasive carcinoma, carcinoma in situ, and low-grade glandular dysplasia
- Radial (Omental) Margin: Negative for invasive carcinoma

LYMPH NODES, REGIONAL

- Number of Lymph Nodes Examined: 65
- Number of Lymph Nodes Involved: 44

TREATMENT EFFECT

- No prior treatment

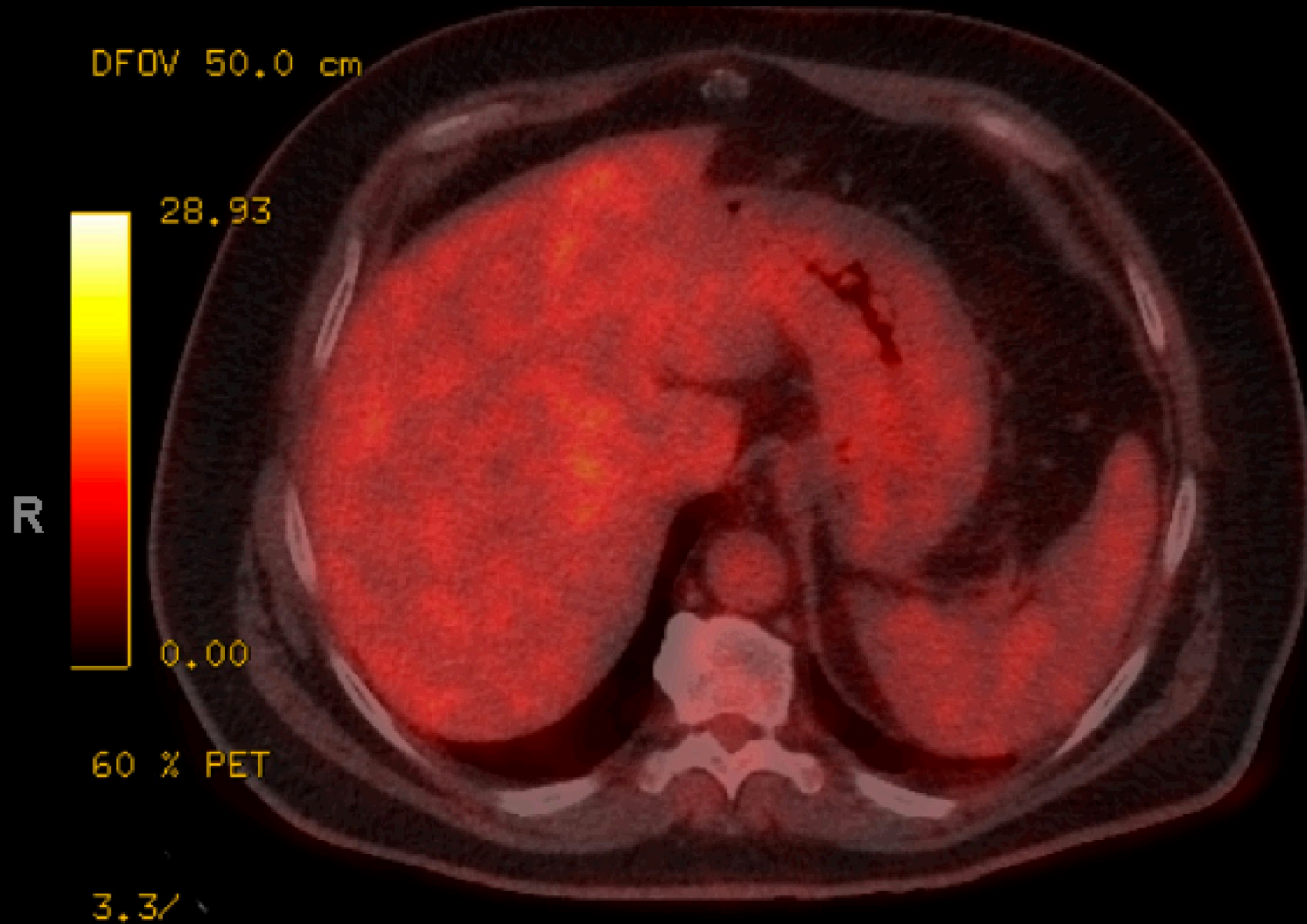
PATHOLOGIC STAGE

pT4bpN3b

ANCILLARY STUDIES

- Best Tumour Block: A16
- Biomarker Results: Submitted, see separate report: VR15-1013

The gastric malignancy is not FDG avid



Synoptic Report:

SPECIMEN

- Total gastrectomy; Stomach

TUMOUR

- Tumour Site: Lesser curvature
- Tumour Size: 17 cm
- Histologic Type: Adenocarcinoma
- Lauren Classification of Adenocarcinoma: Diffuse type (signet-ring carcinoma if >50% signet-ring cells)
- Histologic Grade: G3: Poorly differentiated
- Microscopic Extent of Tumour: Tumour invades subserosal connective tissue without involvement of visceral peritoneum
- Lymph-Vascular Invasion: Not identified
- Perineural Invasion: Not identified

MARGINS

- Proximal Margin: Negative for invasive carcinoma, carcinoma in situ, and low-grade glandular dysplasia
- Distal Margin: Negative for invasive carcinoma, carcinoma in situ, and low-grade glandular dysplasia
- Radial (Omental) Margin: Negative for invasive carcinoma
- All Margins Negative for Invasive Carcinoma
- Distance of Invasive Carcinoma From Closest Margin: 0.7 cm
- Margin: Other
- Specify Other Margin: proximal and distal

LYMPH NODES, REGIONAL

- Number of Lymph Nodes Examined: 21
- Number of Lymph Nodes Involved: 0

TREATMENT EFFECT

- No definite response identified (grade 3, poor or no response)

PATHOLOGIC STAGE

- ypT3 pN0

ANCILLARY STUDIES

- Best Tumour Block: A14
- Biomarker Results: Not performed

Indications for PET



1. Indeterminate lesions (lung, liver, RP nodes)
2. Recurrent disease*
3. Assess treatment response**

Workup



EUS

Essential for small ?early lesions (T1 and T2)

Operator dependent

T-stage accuracy (60-90%)

N-stage accuracy (50-80%)

Good for T1 vs T2

Not so good for T1a vs. T1b

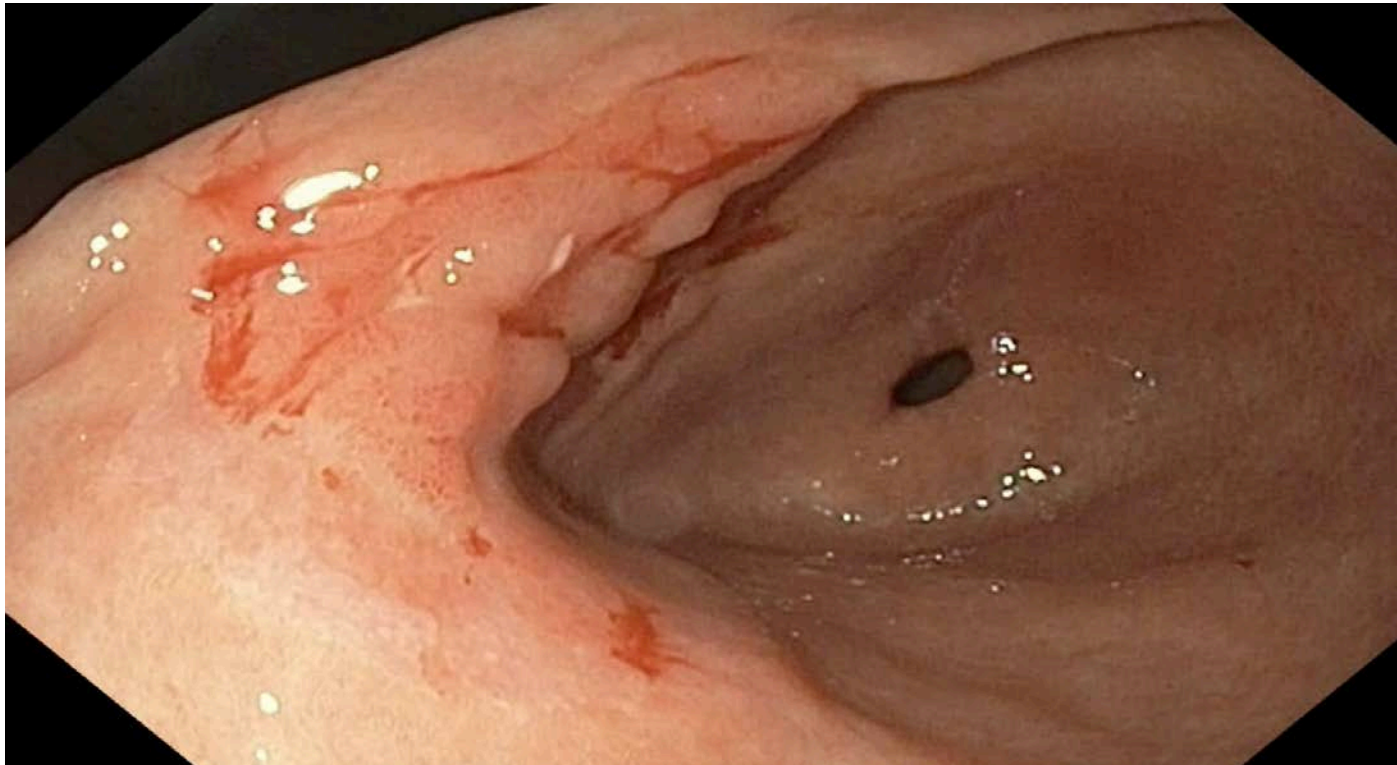
Role in ?T4 lesions



****Expedite Multi-modality treatment**

Papanikolaou et al. 2011 *Ann Gastroenterol*

What's the T stage?

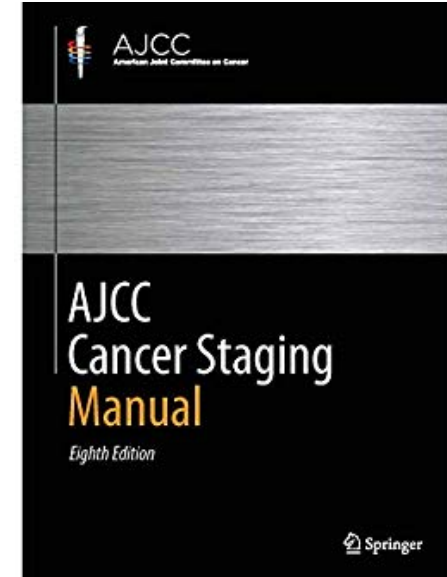


Diagnostic Laparoscopy



Metastatic Sites

The most common metastatic distribution is to the liver, peritoneal surfaces, and nonregional/distant lymph nodes. Central nervous system and pulmonary metastases occur but are less frequent. Tumors found in these locations are considered metastatic disease (M1). In contrast, direct extension of bulky tumors to the liver, transverse colon, pancreas, and/or undersurface of the diaphragm is considered as tumor invading adjacent structures/organs (T4b) not M1. Positive peritoneal cytology is classified as metastatic disease (M1).

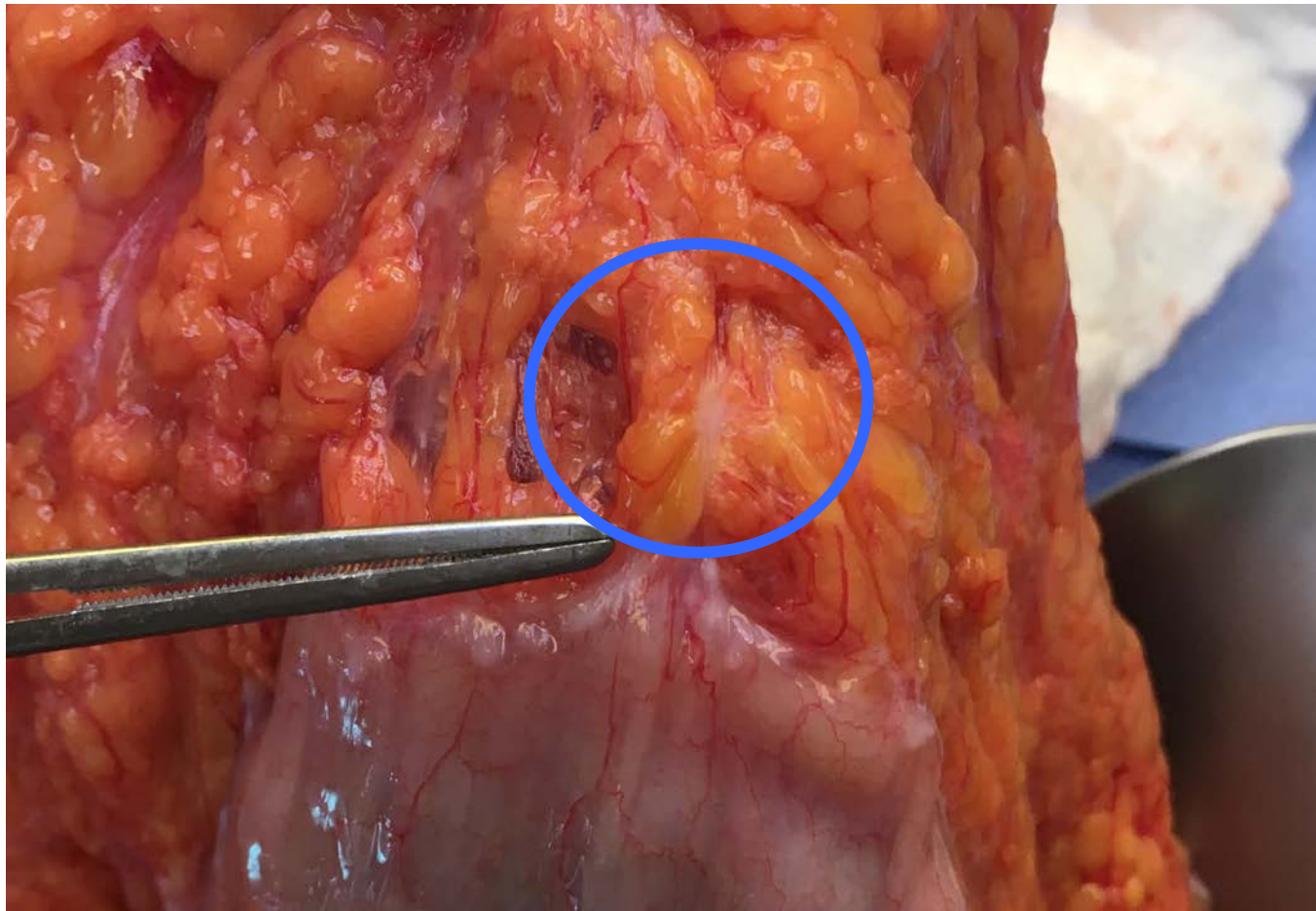


Occult peritoneal metastases = 20%

Positive cytology = 13%

Ikoma et al. 2016 *Ann Surg Onc*

Sub-radiologic



Recommendation



Diagnostic Laparoscopy +/- washings

≥T2

≥N+

Prior to chemo



Accurate staging

Avoid laparotomy (M1)

Most appropriate therapy

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