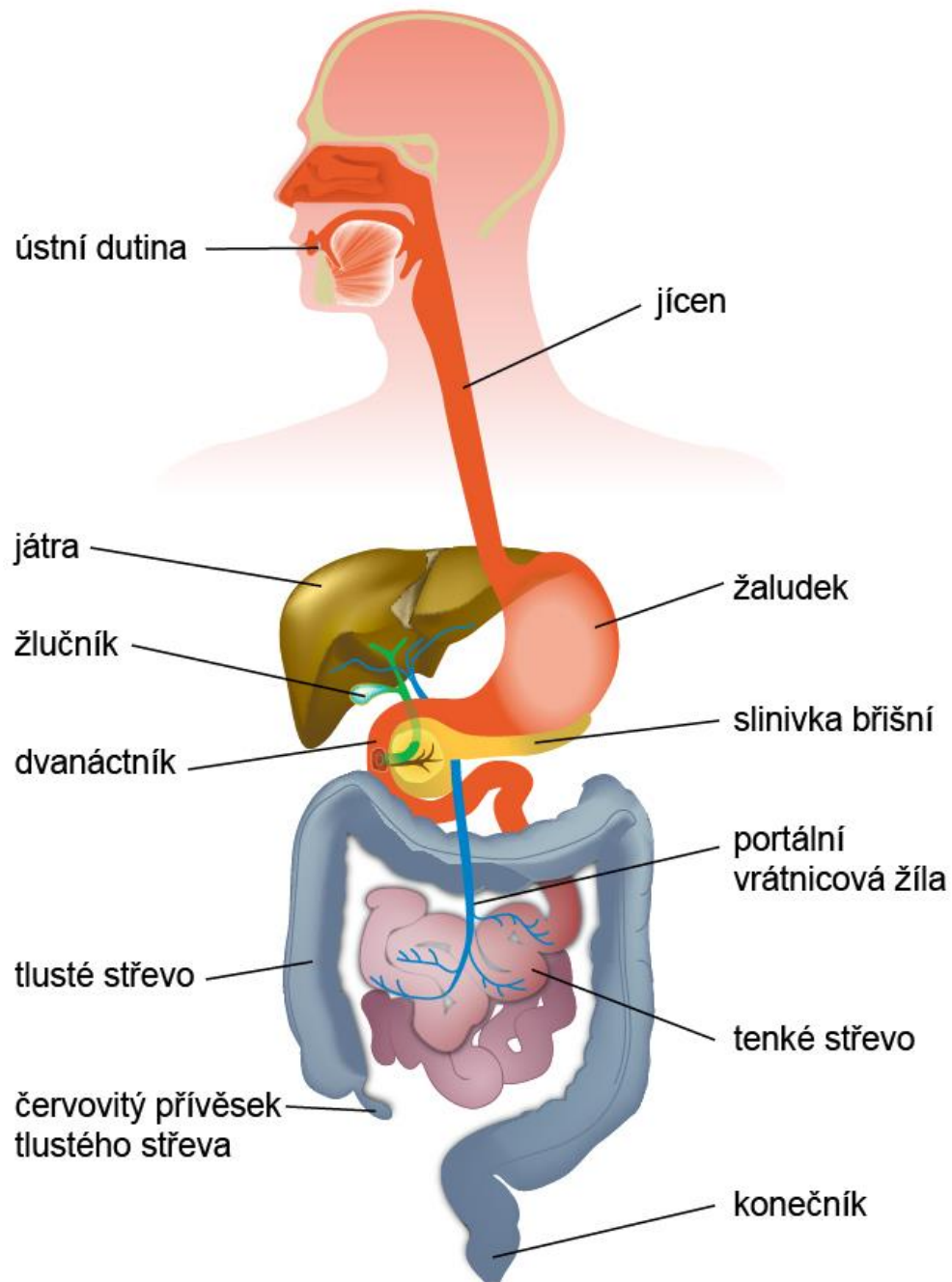


Nádory GIT

Tomáš Kazda

tomas.kazda@mou.cz

Klinika radiační onkologie
MOÚ



- epidemiologie – jak časté (incidence, prevalence, mortalita)
- etiologie – příčiny vzniku (faktory vnitřní, zevní)
- symptomatologie
- diagnostika
- klasifikace (TNM), histologie
- léčba – kurativní, adjuvantní, paliativní, neoadjuvantní
 - operace, radioterapie, chemoterapie, hormonoterapie, cílená léčba, imunoterapie, podpůrná léčba

Společné charakteristiky nádorů GIT

- většina nádorů vzniká maligní transformací slizničního epitelu
- vnější etiologické faktory - životospráva
- diagnostika – endoskopie, zobrazovací metody
- význam mají všechny základní typy léčby – komplexní onkologické péče (operace, radioterapie, chemoterapie, cílená léčba)
- důraz na včasný záchyt onemocnění – kurativní léčba – operace (resekce)
- chemoterapie: 5 fluorouracil

Nádory jícnu

- relativně vzácné
- kouření, alkohol, iritace sliznice HCl, Barretův jícn
- polykací potíže, hubnutí, bolest při polykání
- endoskopie (esofagogastroskopie) s biopsií, RTG hrudníku (pasáž), CT hrudníku a další
- histologické typy
 - spinocelulární karcinom (kouření, alkohol)
 - adenokarcinom (působení HCl, Barretův jícn)
- léčba se liší stádiem onemocnění a lokalitou postižení – krční vs. hrudní úsek
- radikální operační výkon je možný jen u vybraných pacientů
- kombinace radioterapie a chemoterapie (neoadjuvantní, kurativní)
- důraz na podpůrnou léčbu, zajištění nutrice



Endoscopy of the esophagus



Tumor

Esophagus

GE MEDICAL SYSTEMS
Imaging & Diagnostics
MULTI-COCH

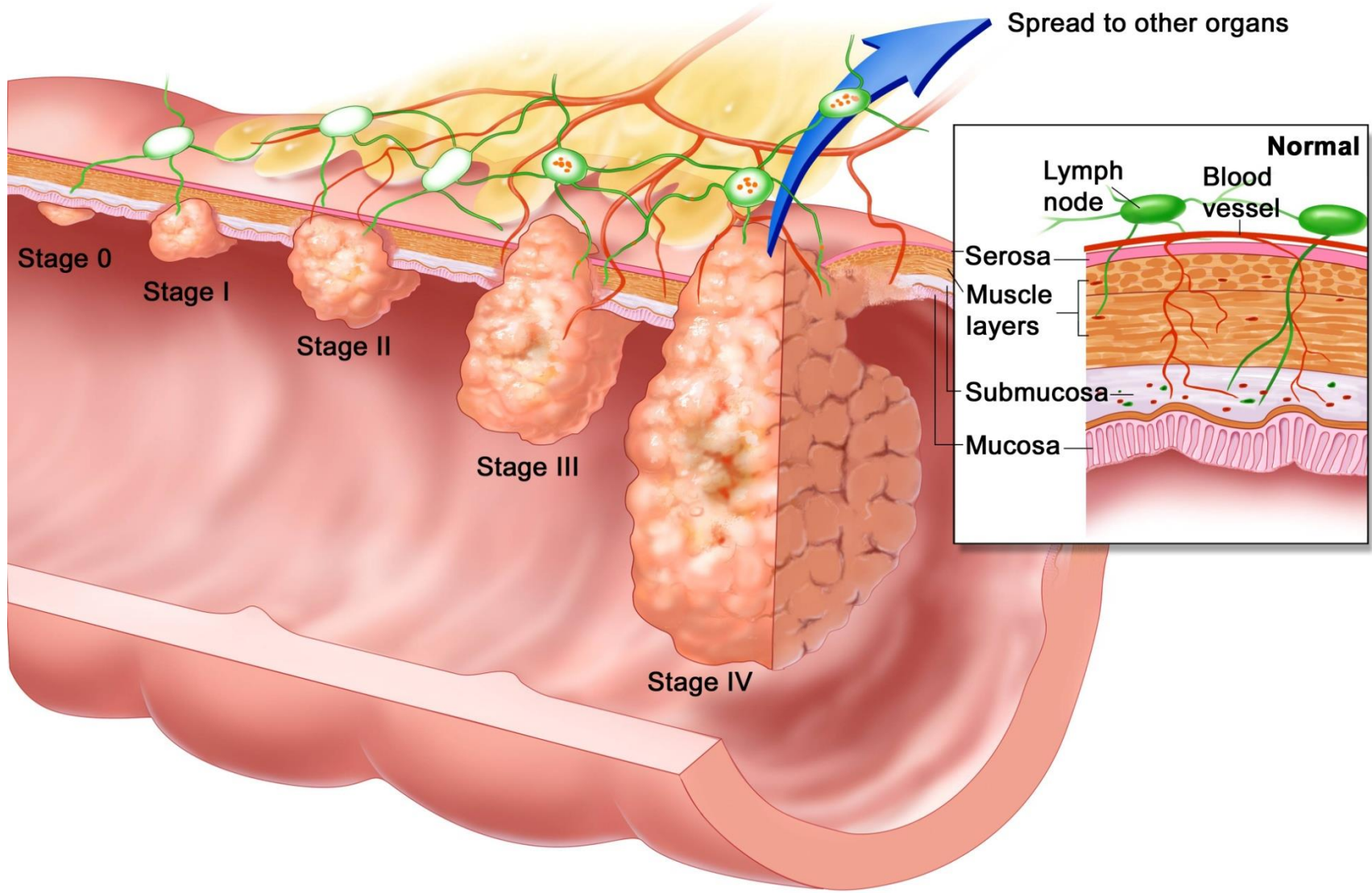


FOV: Coronal
DFO: 43.2 deg
CRA: 0.0 deg
T: 0.0 deg
TR: 1.00
T₂: 101
APR: 00/11: 13
00: 47: 00

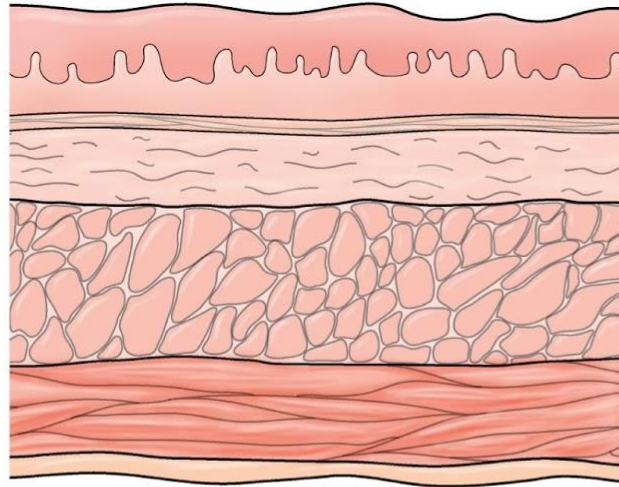
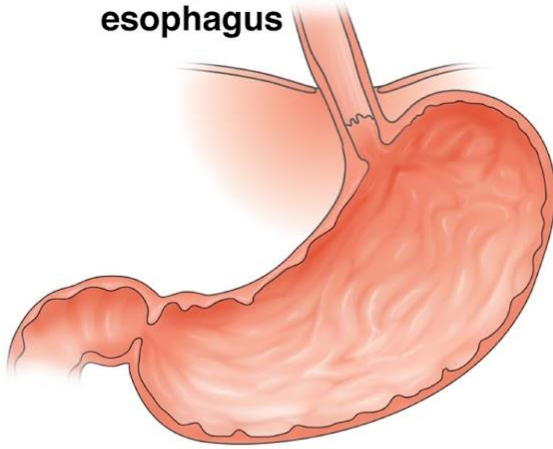
IMG 1)
(Cont)

IMG 2
FRAME = 323 + 452



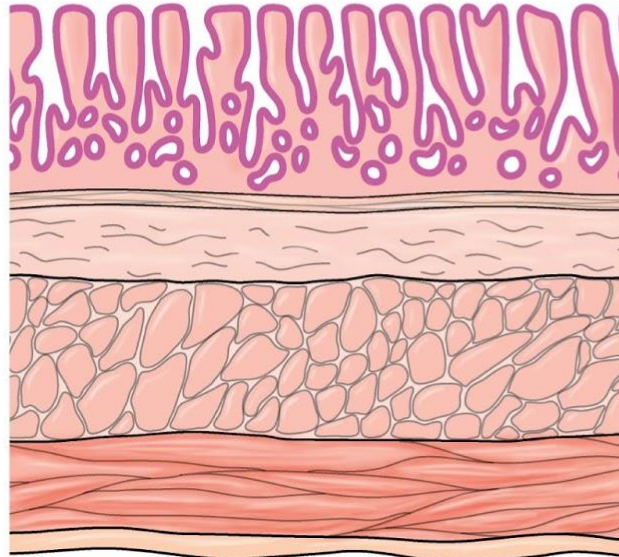
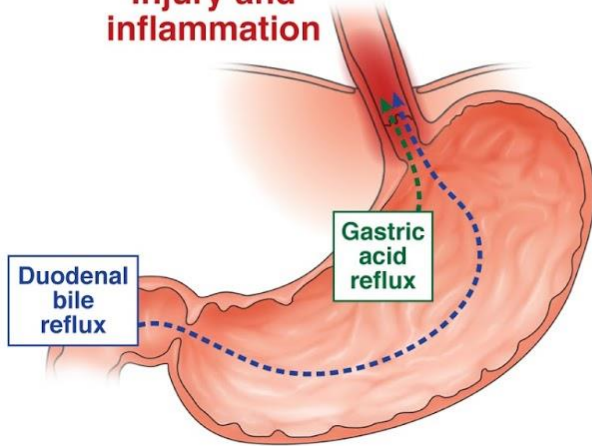


Normal
esophagus



A Normal
squamous
epithelium

Injury and
inflammation

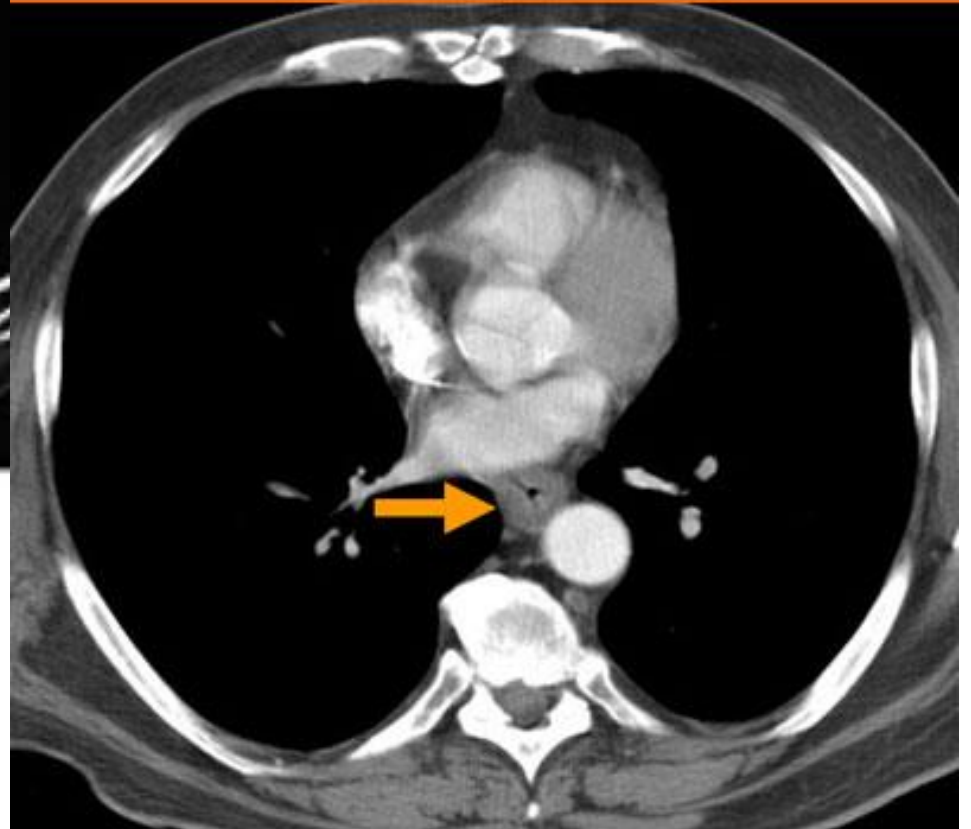


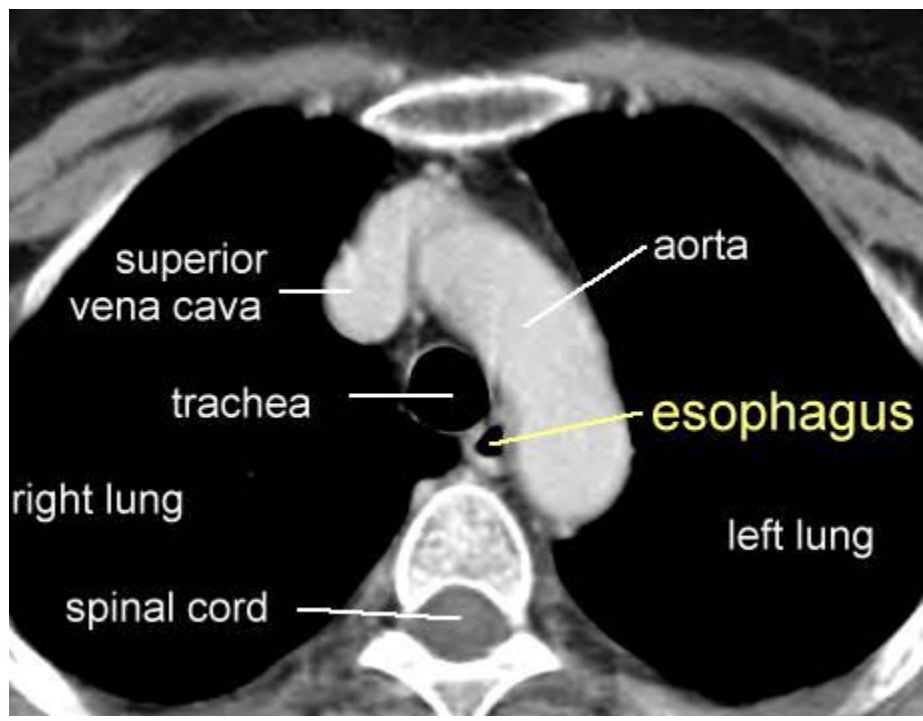
B Metaplastic
columnar
tissue (BE)



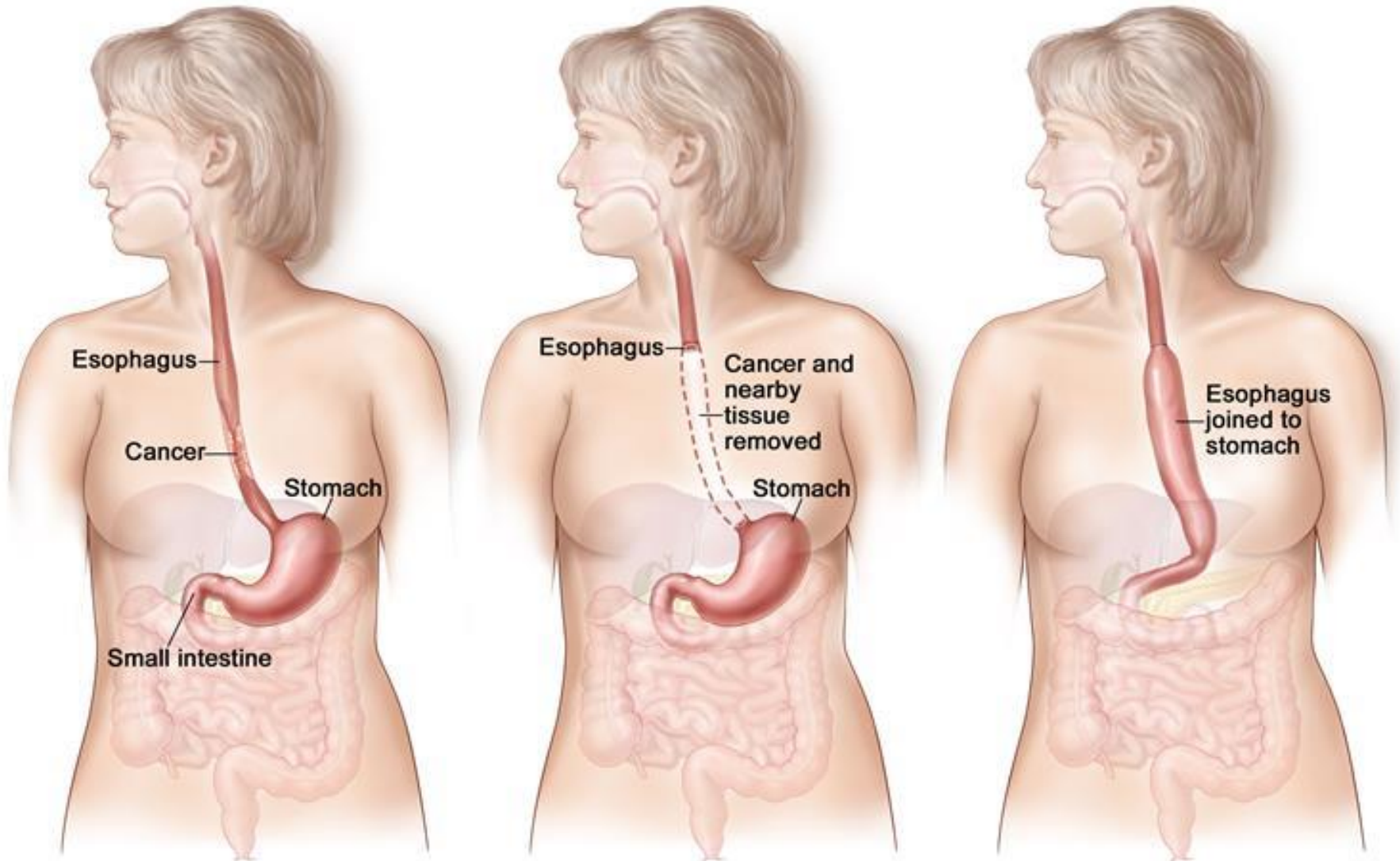
Medscape®

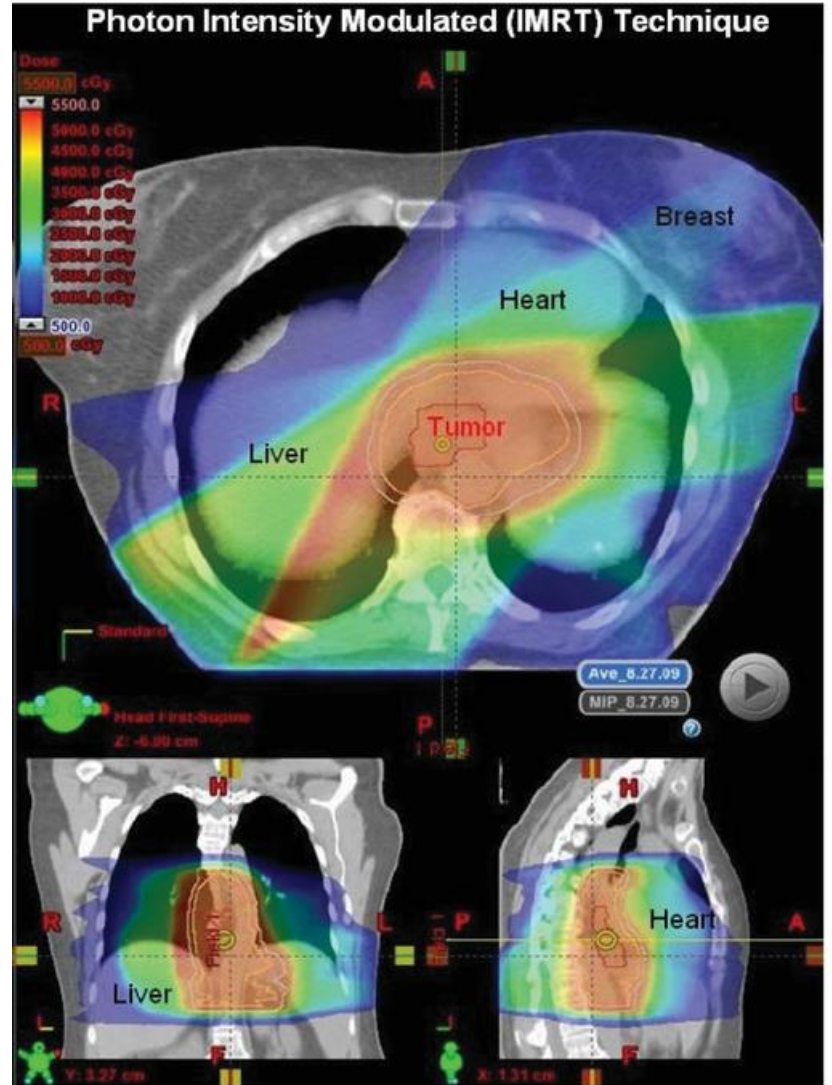
www.medscape.com

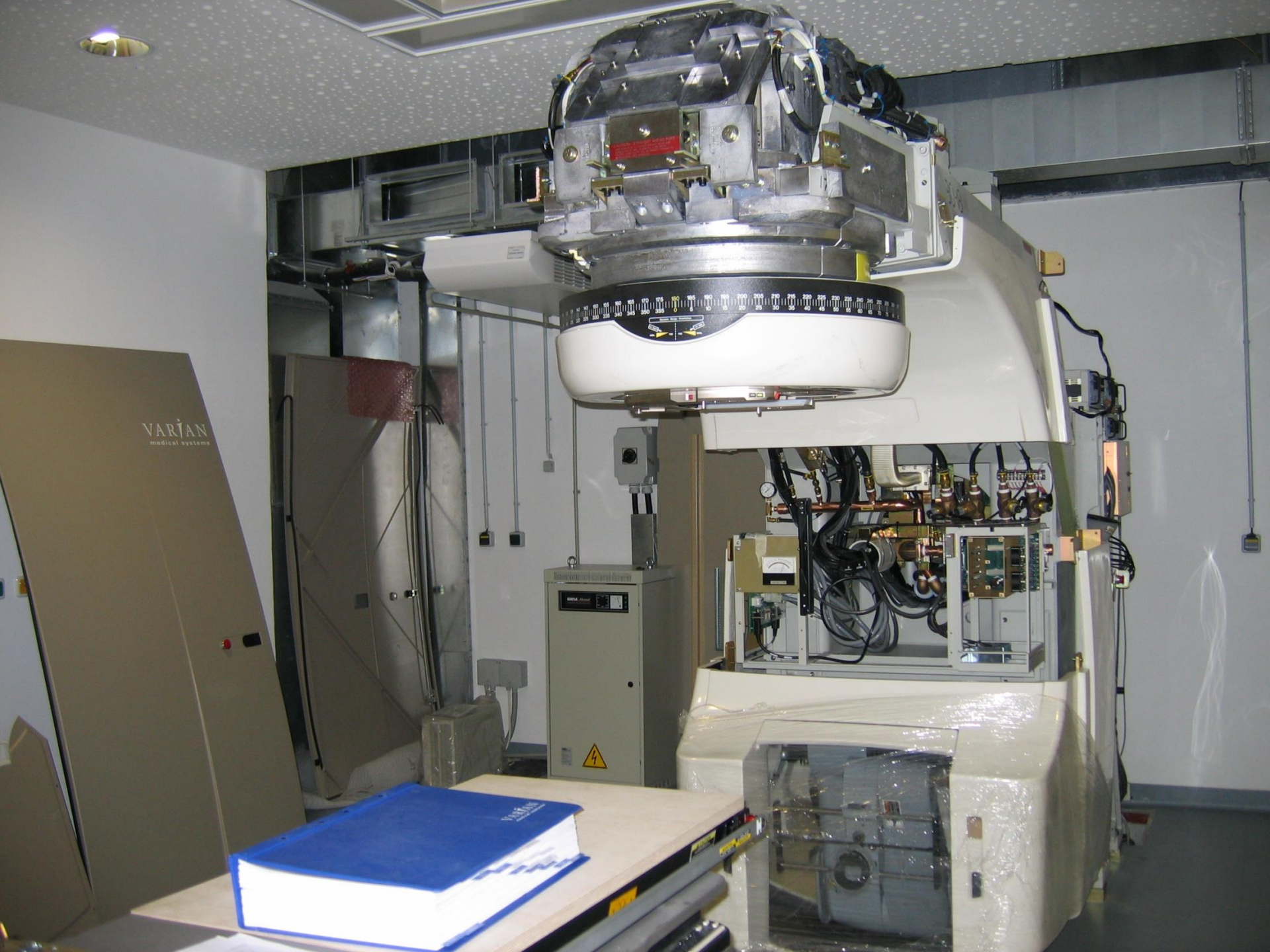




Esophagectomy

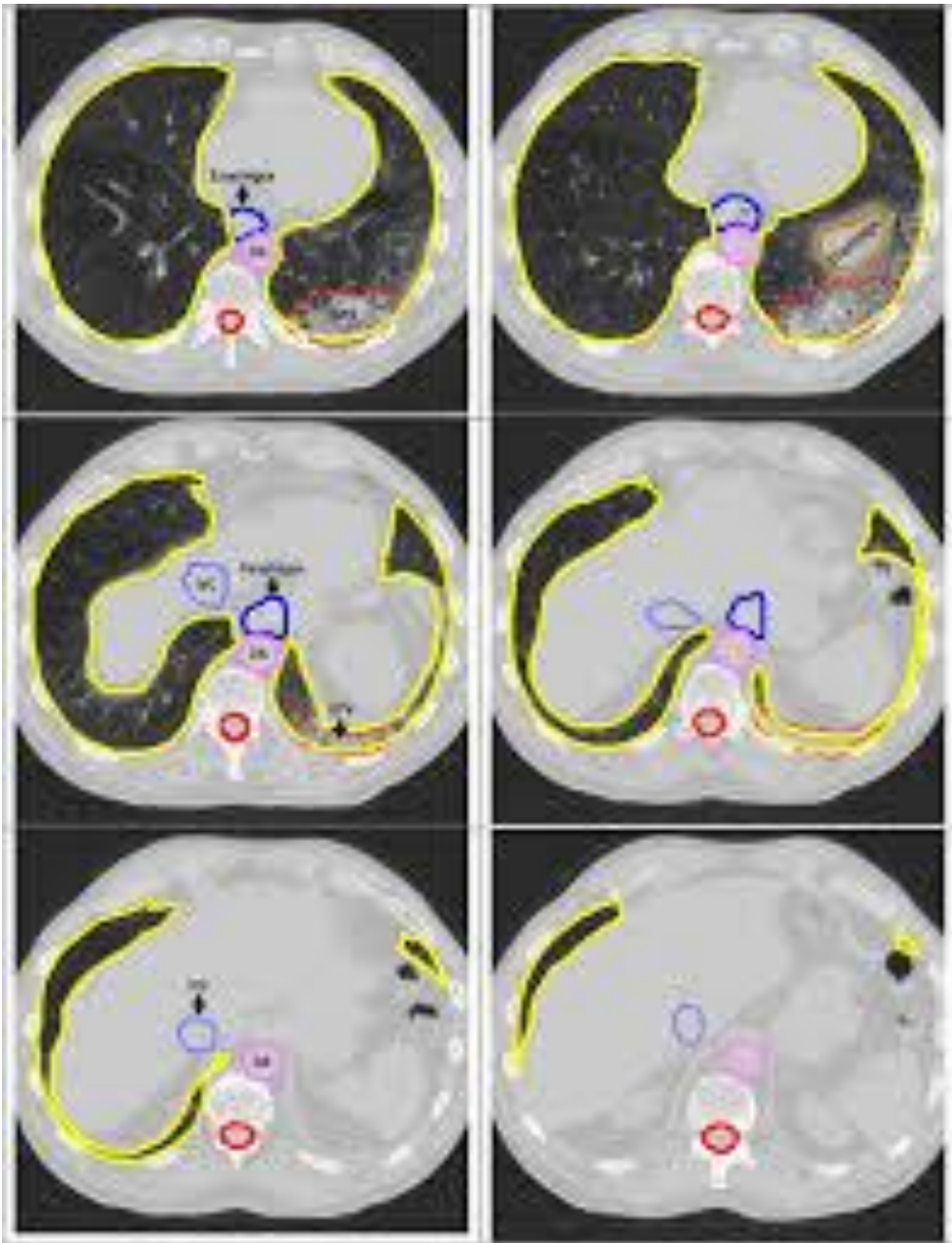


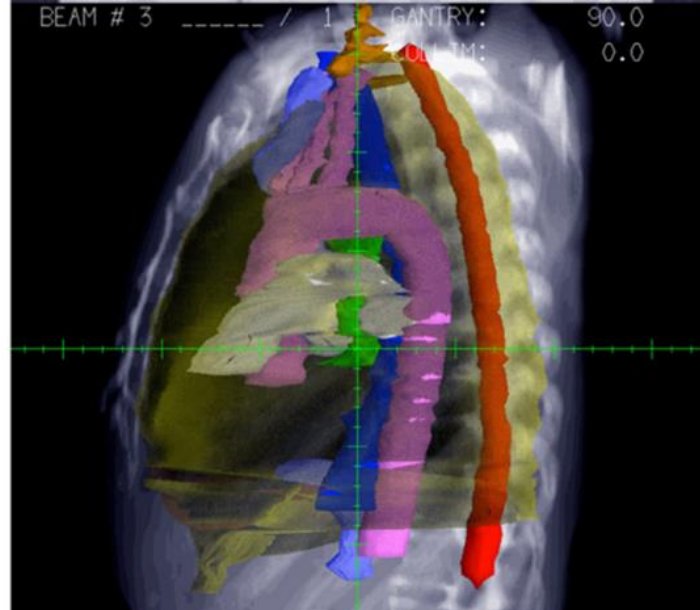
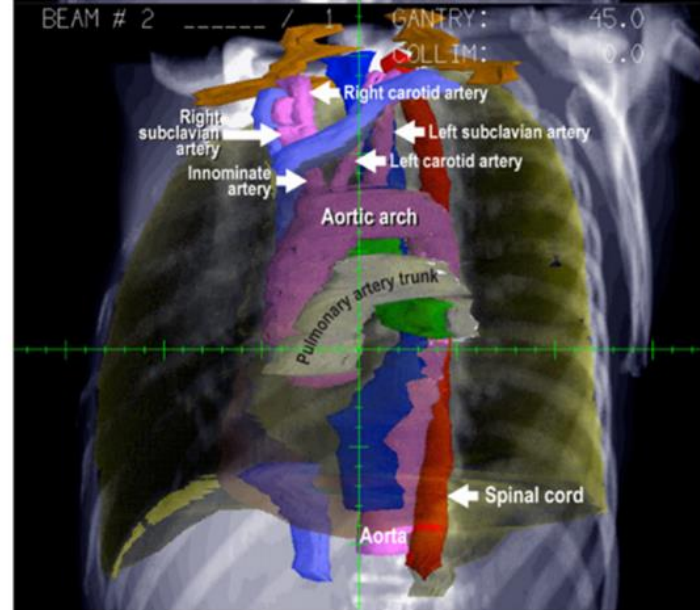
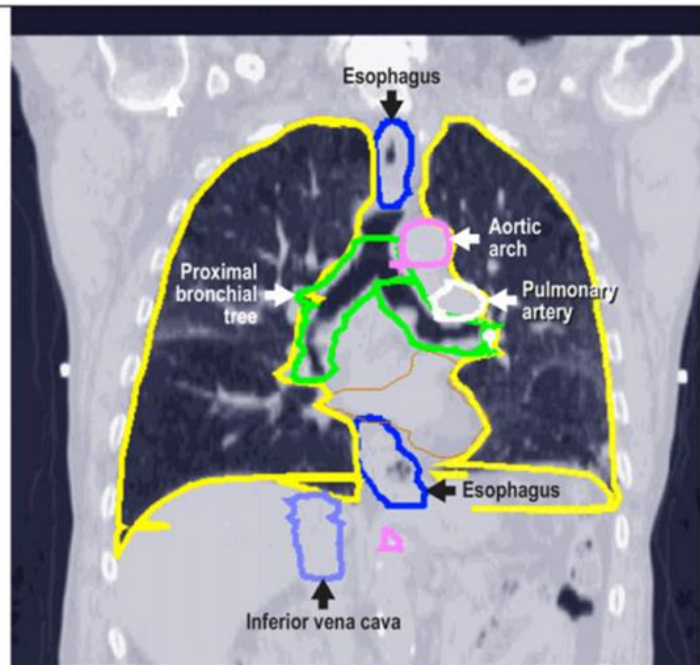
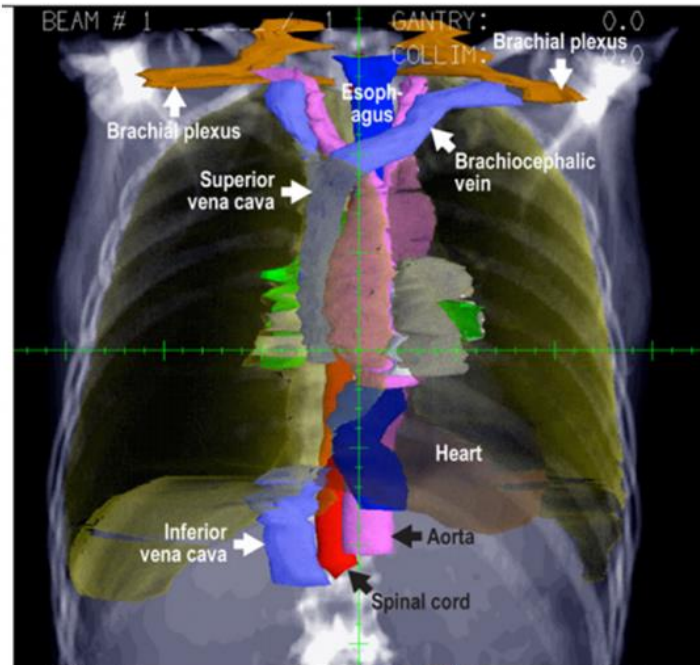


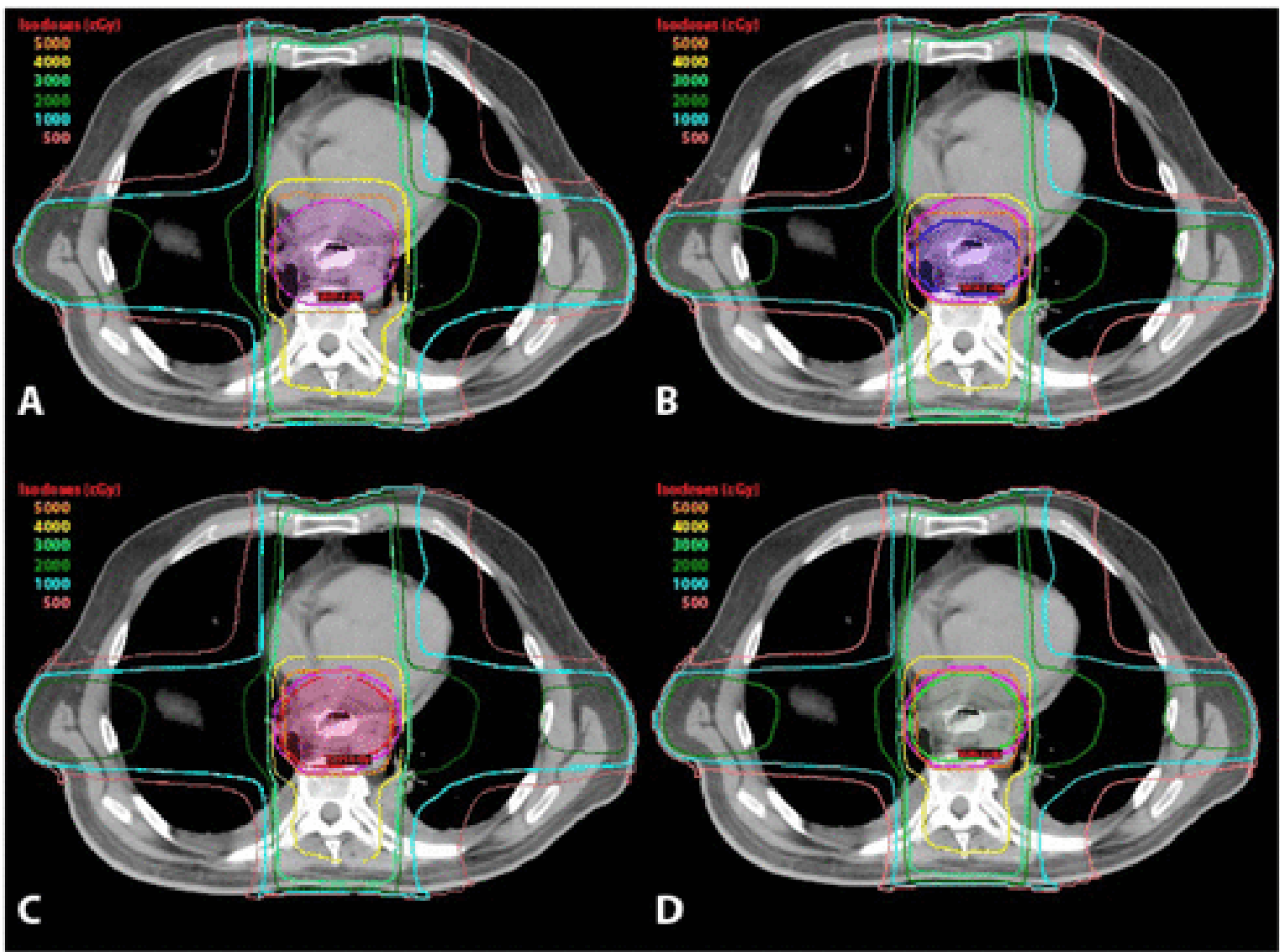


VARIAN
medical systems





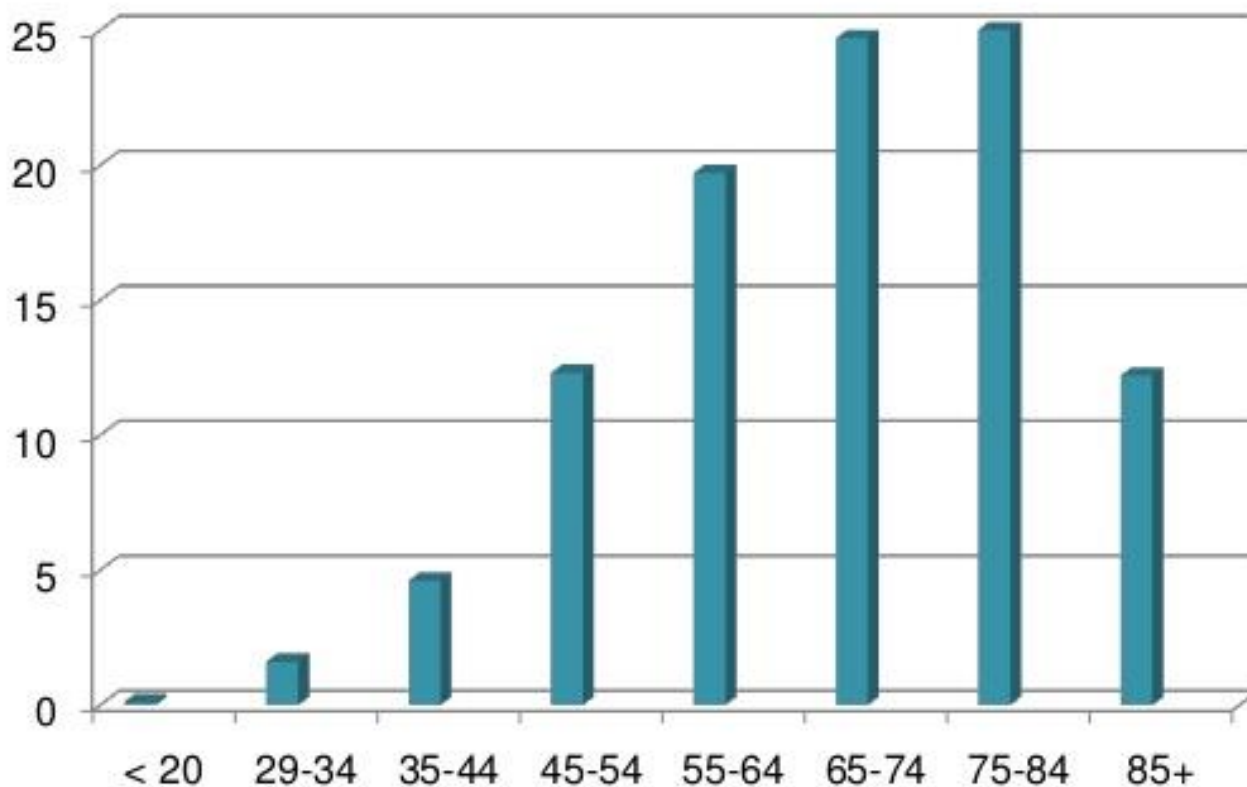




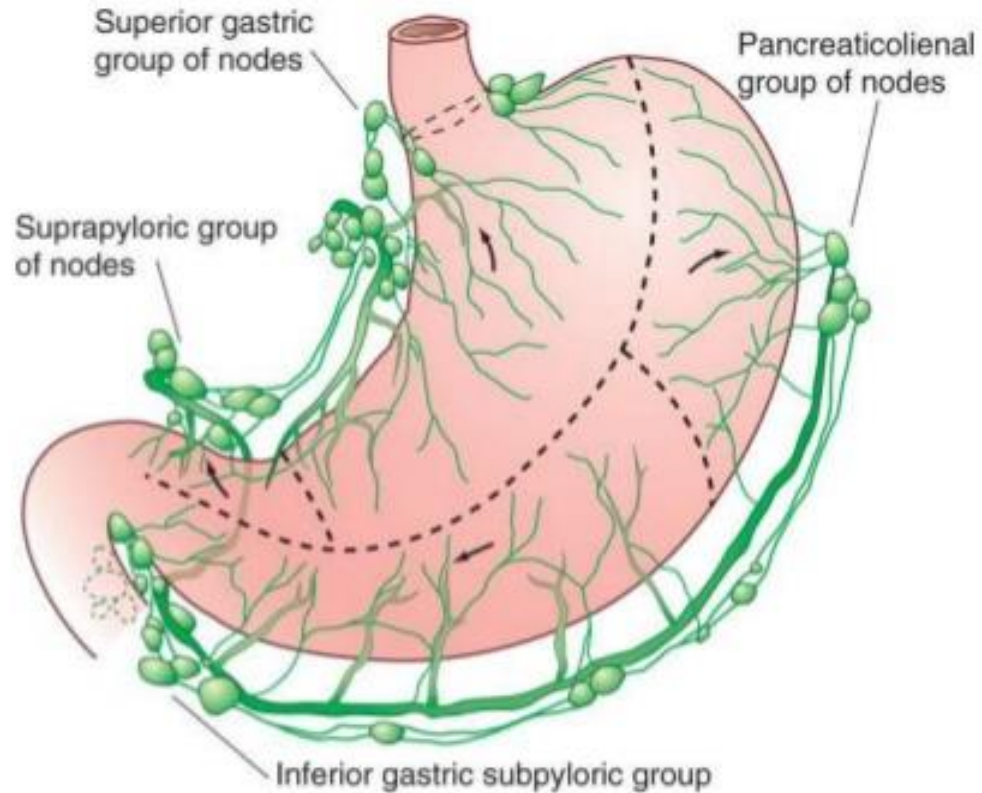
Nádory žaludku

- celosvětově poměrně časté, u nás incidence klesá
- kouření, strava (sůl), obezita, Helicobacter pylori, věk
- symptomy často nespecifické (dyspepsie, jako vředová choroba), hubnutí, zvracení
- endoskopie (esofagogastroskopie) s biopsií, RTG hrudníku, CT hrudníku, markery..
- patologická uzlina v nadklíčku – Virchowova; MTS ovaria – Krukenbergův nádor
- histologické typy – adenokarcinom, GIST
- léčba se liší stádiem onemocnění a lokalitou postižení – krční vs. hrudní úsek
- jedinou kurativní metodou je operace (endoskopická, radikální gastrektomie)
- chemoradioterapie, perioperační chemoterapie
- důraz na podpůrnou léčbu, zajištění nutrice

Age Distribution

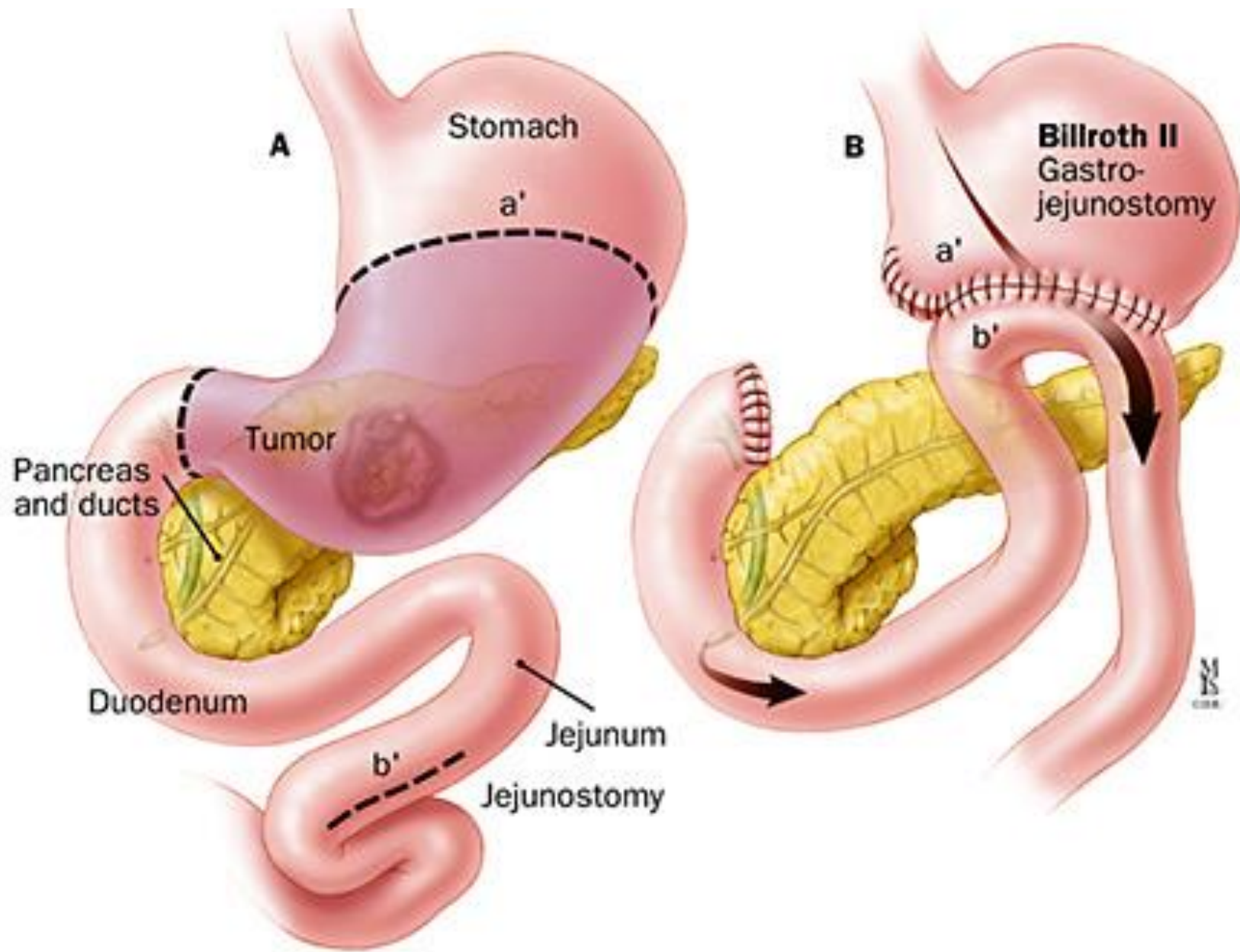


Stomach and Regional Lymph Nodes

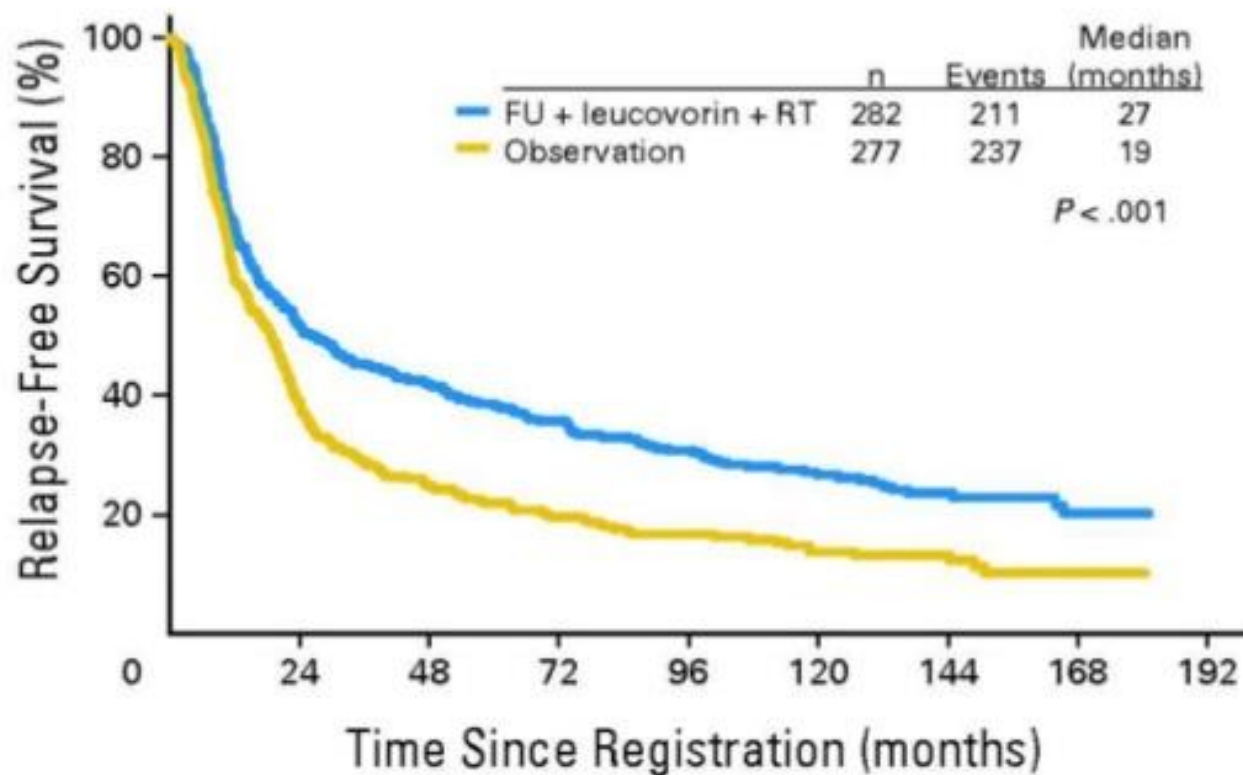


5 Year Survival by Stage

IA	70.8%
IB	57.4%
IIA	45.5%
IIB	32.8%
IIIA	19.8%
IIIB	14.0%
IIIC	9.2%
IV	4.0%

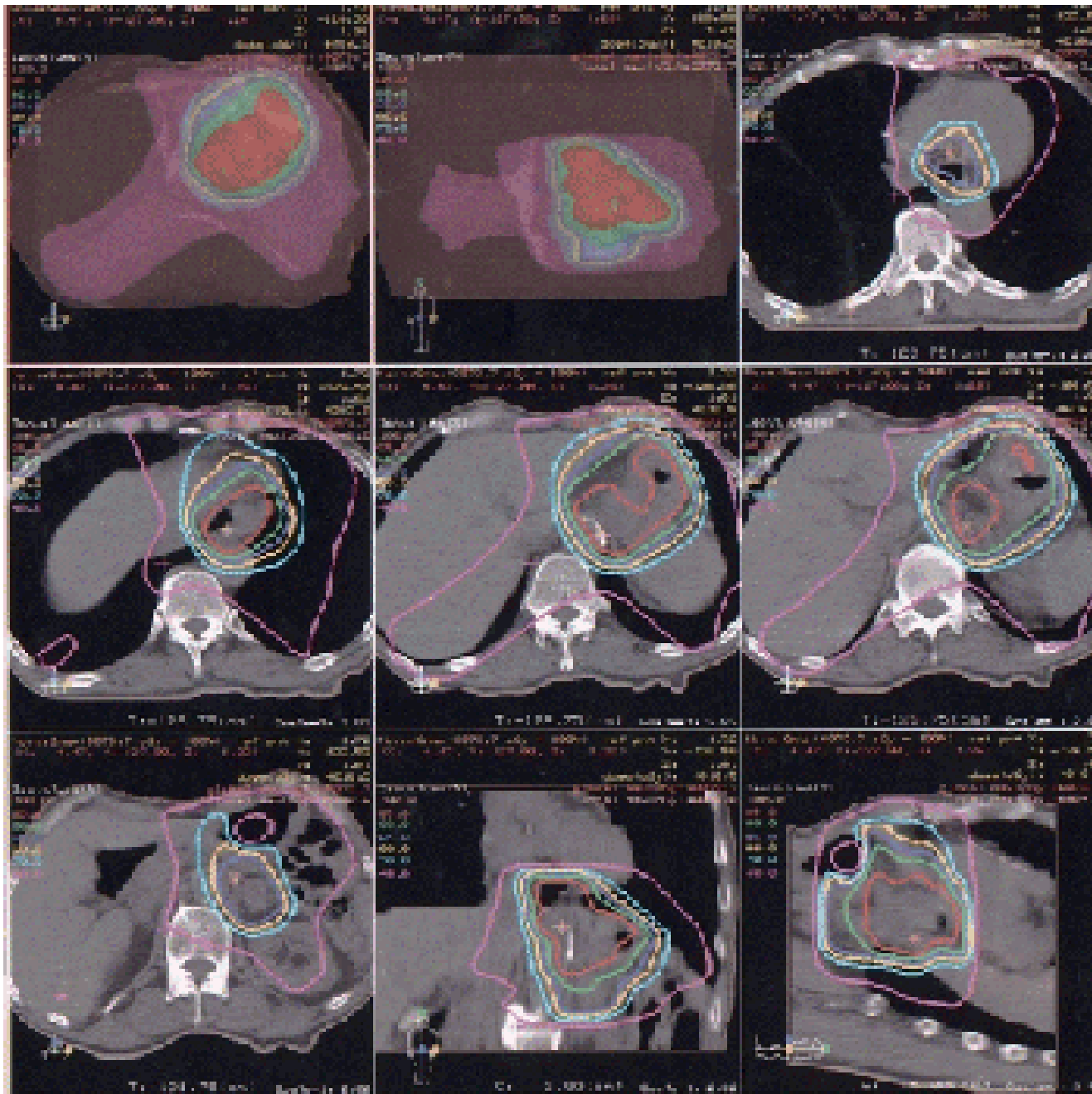


Updated Analysis of SWOG-Directed Intergroup Study 0116: A Phase III Trial of Adjuvant Radiochemotherapy Versus Observation After Curative Gastric Cancer Resection



JCO July 1, 2012 vol. 30 no. 192327-2333

https://www.rtog.org/LinkClick.aspx?fileticket=dgwtfz553_g%3d&tabid=387

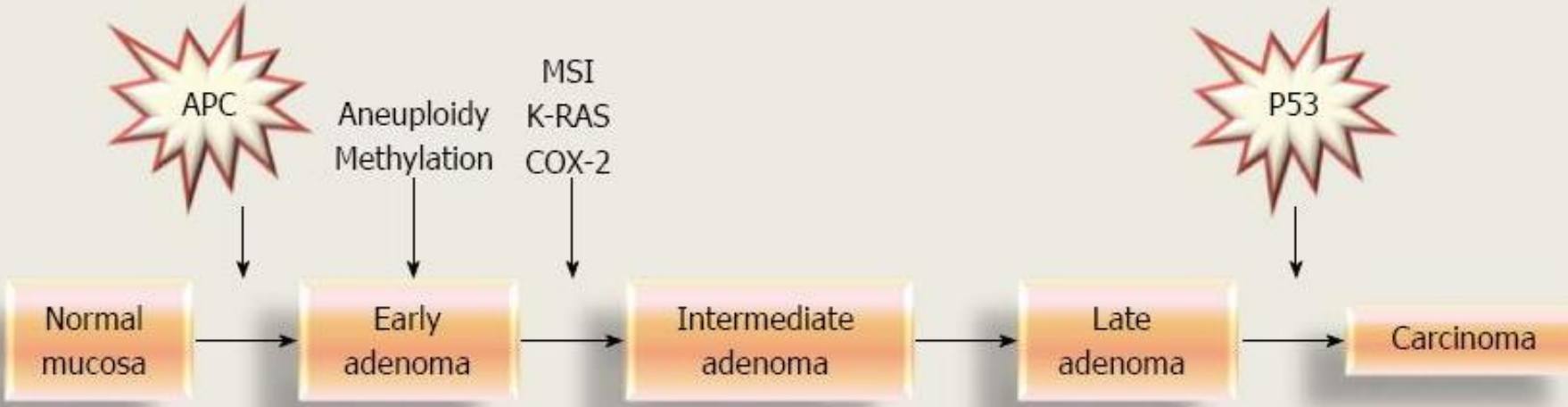


Nádory kolorekta

- celosvětově druhou nejčastější příčinou úmrtí na nádorové onemocnění
- v ČR nejvyšší incidence: 70/100.000, mortalita 37/100.000
- západní styl života, obezita, červené maso, málo vlákniny
- hereditární syndromy (FAP, HNPCC – Lynchův sy)
- screening (TOKS, kolonoskopie)
- dlouho bezpříznakové, krvácení, změna defekačního stereotypu, hubnutí
- vyšetření per rektum, kolonoskopie s biopsií, CT, MR břicha, UZ břicha, TRUS
- 90% adenokarcinomy, z polypů
- důraz na správnou klasifikaci onemocnění – vliv na léčebnou strategii
- chirurgie – lokální excize, totální mesorektální excize, abdominoperineální resekce (Miles), metastazektomie, odlehčovací stomie
- neoadjuvantní chemoradioterapie
- adjuvantní chemoterapie – 5 fluorouracil, kombinace (oxaliplatina, irinotekan)
- cílená léčba (bevacizumab, panitumumab)
- specifika léčby jaterních metastáz

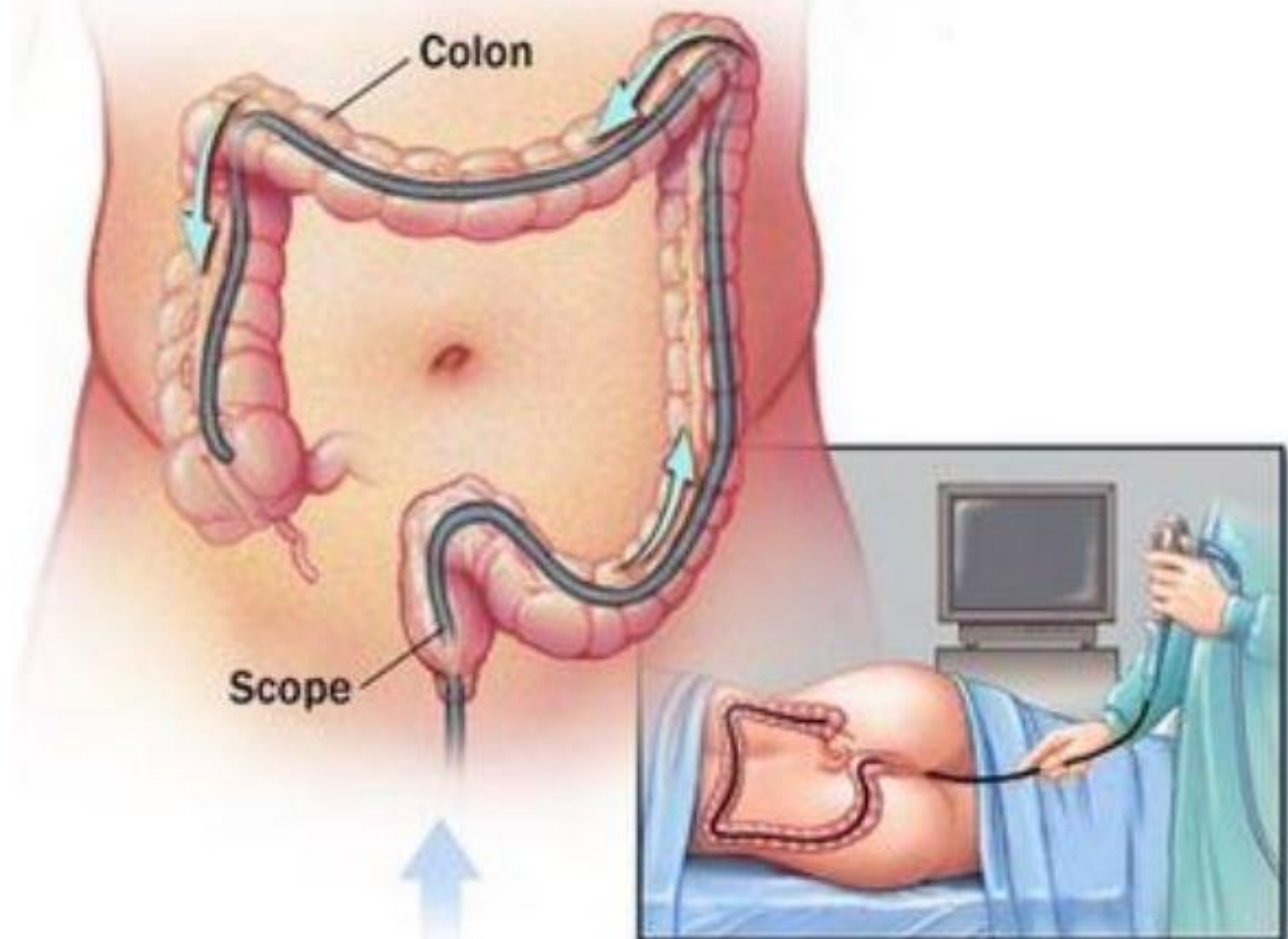
TNM	Rozsah šíření tumoru
Tis	Carcinoma in situ: intraepithelial or invasion of lamina propria
T1 T1sm1 T1sm2 T1sm3	Submucosa T1sm1 – infiltrace vnitřní 1/3 submukózy T1sm2 – infiltrace střední třetiny submukózy T1sm3 – infiltrace zevní 1/3 submukózy <small>(Annals of Oncology: Clinical practice guidelines, Volume 24, Supplement 6, October 2013)</small>
T2	Muscularis propria
T3 T3a T3b T3c T3d	Subserosa/perirectal tissue <1 mm 1-5 mm 5-15 mm 15+ mm
T4	Perforation intovisceral peritoneum(a) or invasion to other organs (b)
N N1a N1b N1c N2a N2b	Regional lymphnodes 1 LU + 2-3 LU + malá deposita v okolním tuku 4-6 LU + 7 a více LU +
M M1a M1b	Vzdálené metastázy 1 postižený orgán nebo set LU více než 1 postižený orgán nebo postižené peritoneum

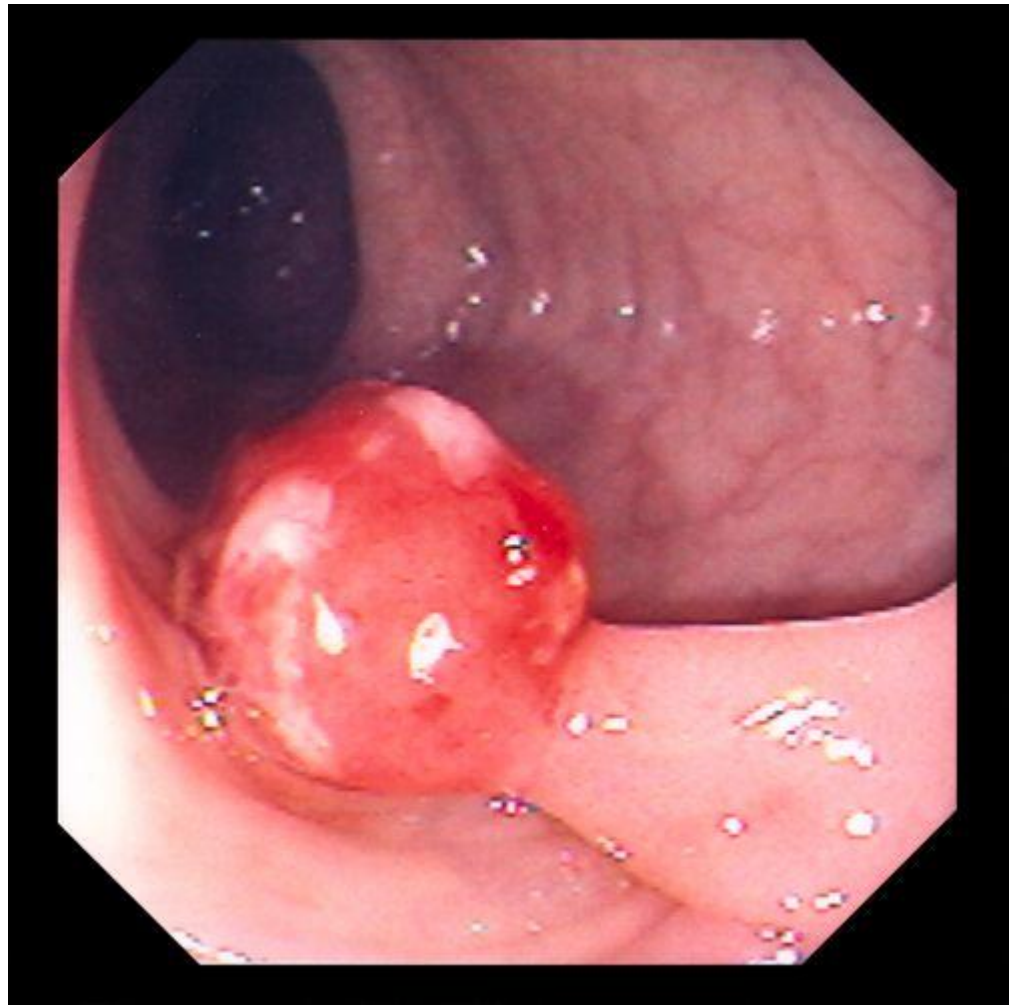
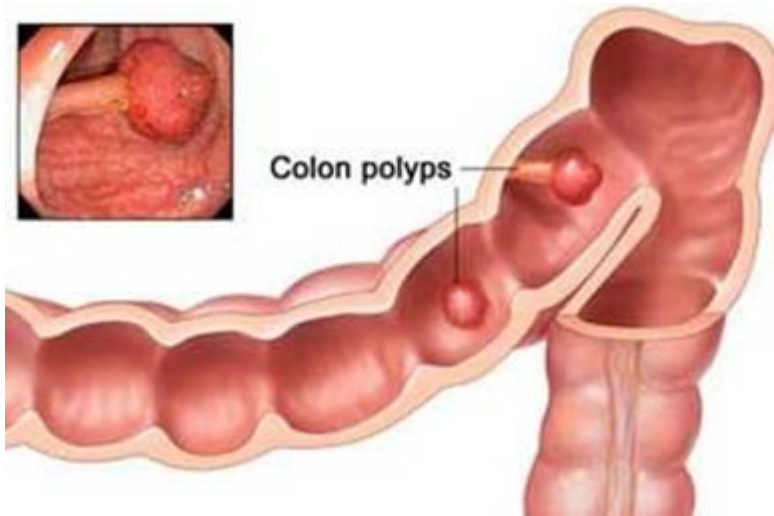
Sporadic colon cancer

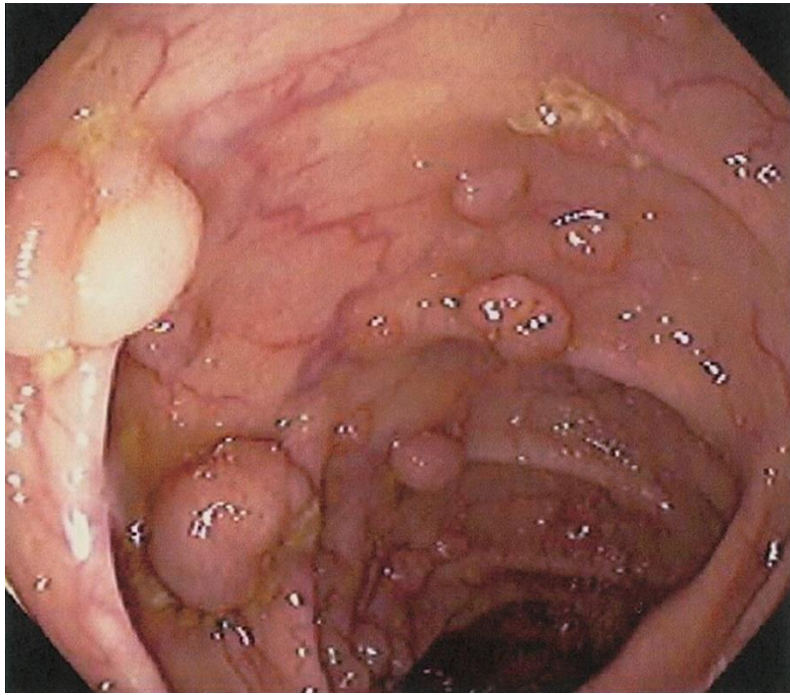


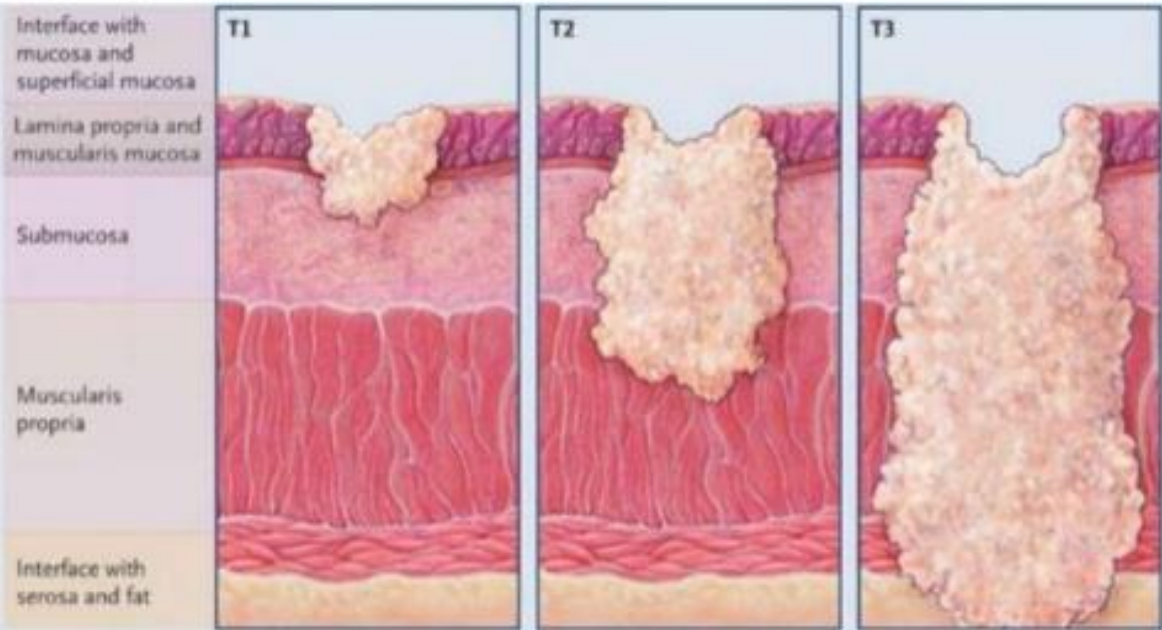
Prognostická skupina	TN substage	Terapeutické možnosti
Very early (2% LR v 5 letech po LE)	cT1 sm1 N0	Lokální excise (TEM) - nutno dosáhnout R0
	If poor prognostic signs (cT1 sm2,3 nebo high grade nebo V1)	Resekce (TME) (or possibly CRT)
Early (good) 3-4% LR	cT1-2; cT3a (b) if middle or high, N0 (or cN1 if high), mrf-, no EMVI	Surgery(TME) alone.
	If poor prognostic signs (crm+, N2)	Surgery (TME) + postop CRT or CTa (CRT with evaluation, if cCR wait-and-see, organ preservation)
Intermediate (bad)	cT2 very low, cT3mrf- (unless cT3a(b)and mid- or high rectum, N1-2, EMVI+, limited cT4aN0	Preop RT (5×5 Gy) or CRT followed by TME. If CRT and cCR, wait-and-see in high risk patients for surgery.
Locally advanced (ugly)	cT3mrf+, cT4a,b, lateral node+	Preop CRT followed by surgery (TME+more extended surgery if needed due to tumour overgrowth). 5×5 Gy with a delay to surgery in elderly or in patients with severe comorbidity who cannot tolerate CRT

Colonoscopy

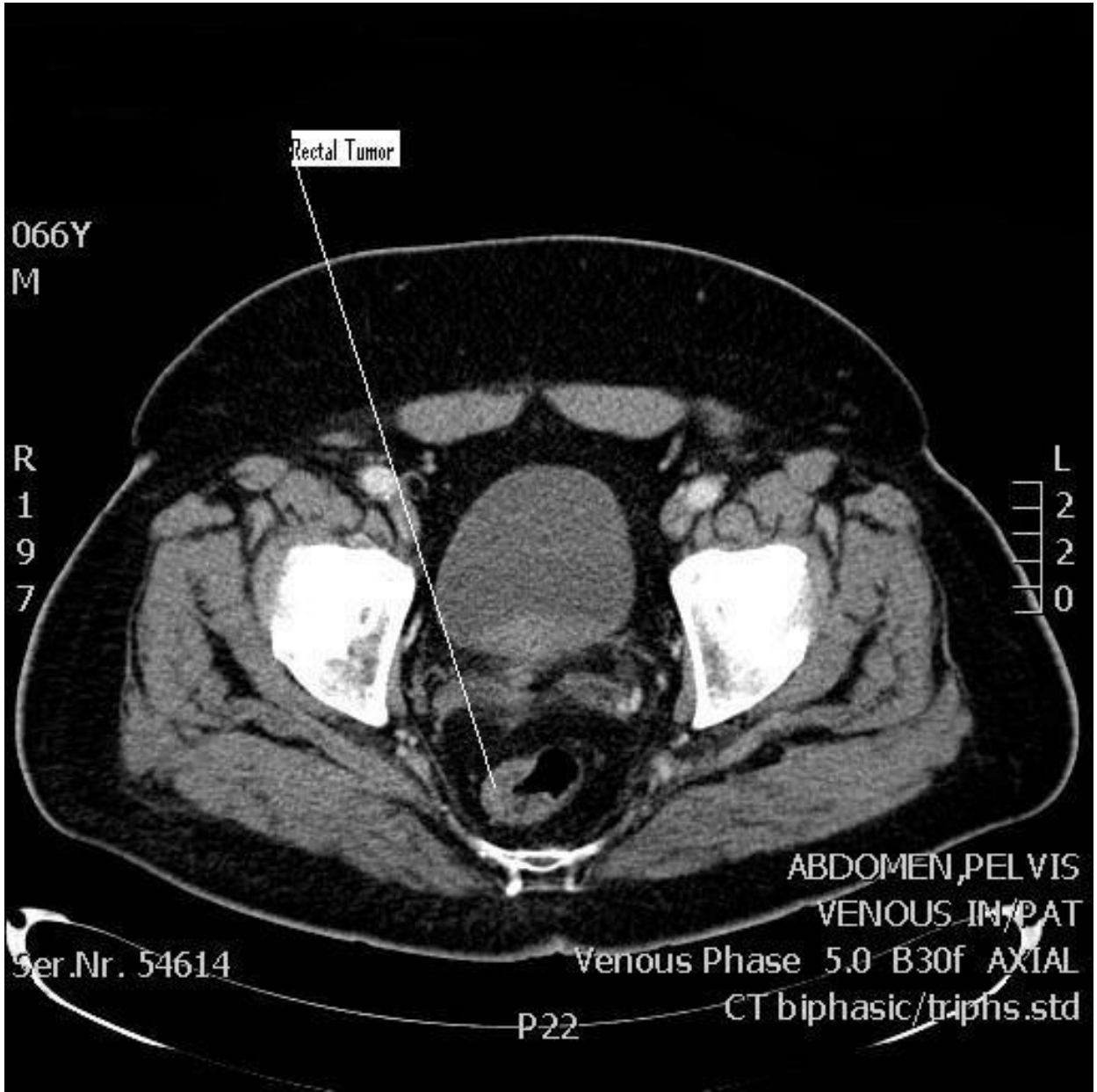












066Y
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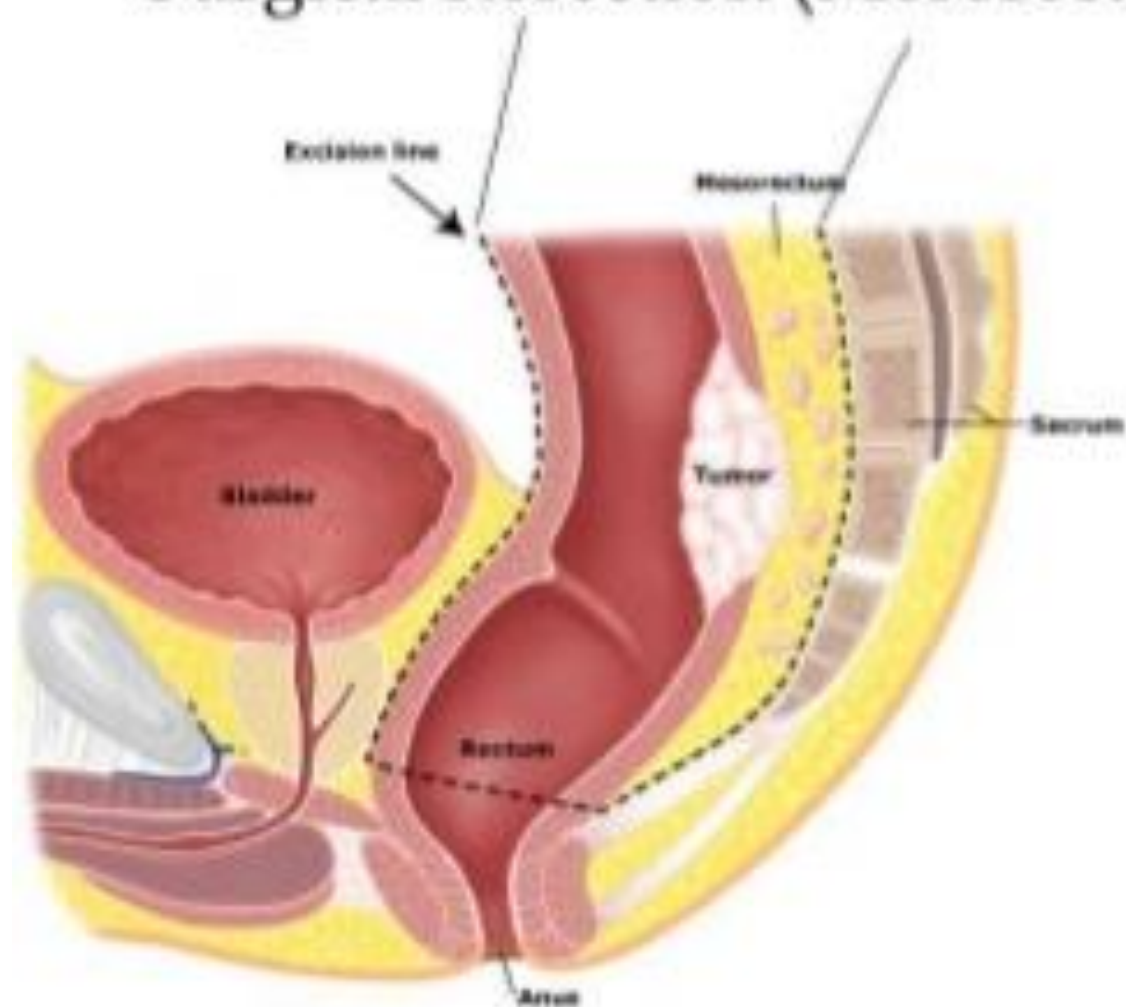
Ser.Nr. 54614

P22

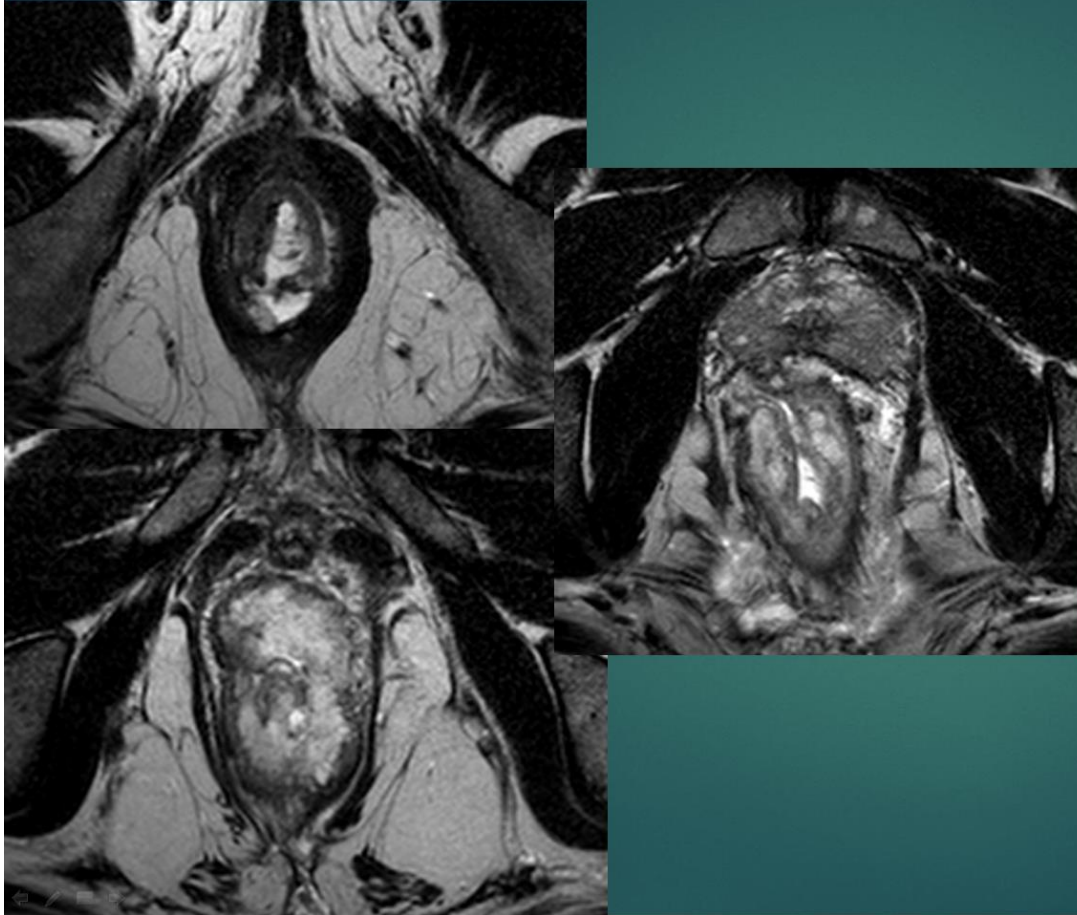
ABDOMEN, PELVIS
VENOUS IM/PAT
Venous Phase 5.0 B30f AXIAL
CT biphasic/triphs.std



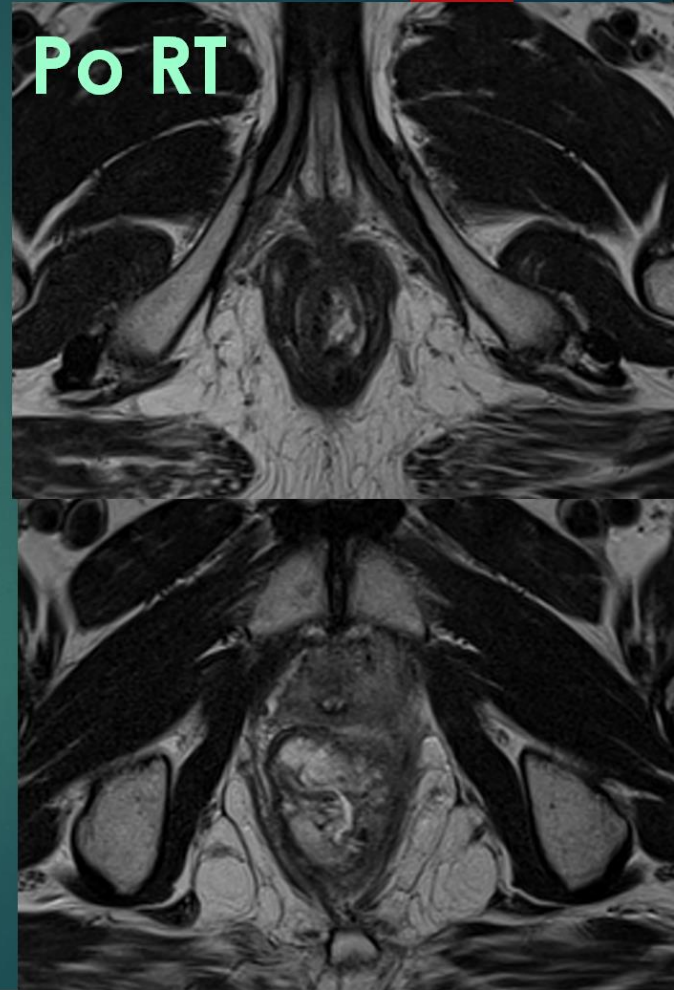
Surgical Resection (Mesorectal)



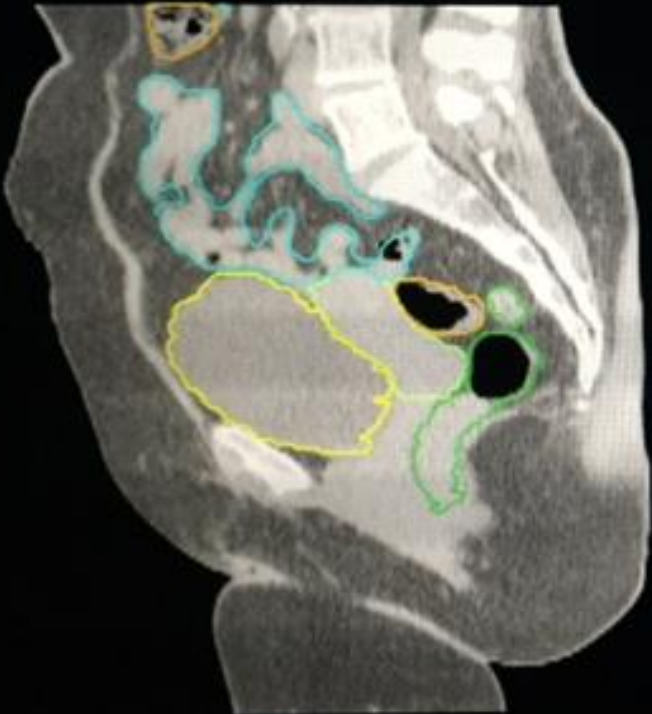
Před RT



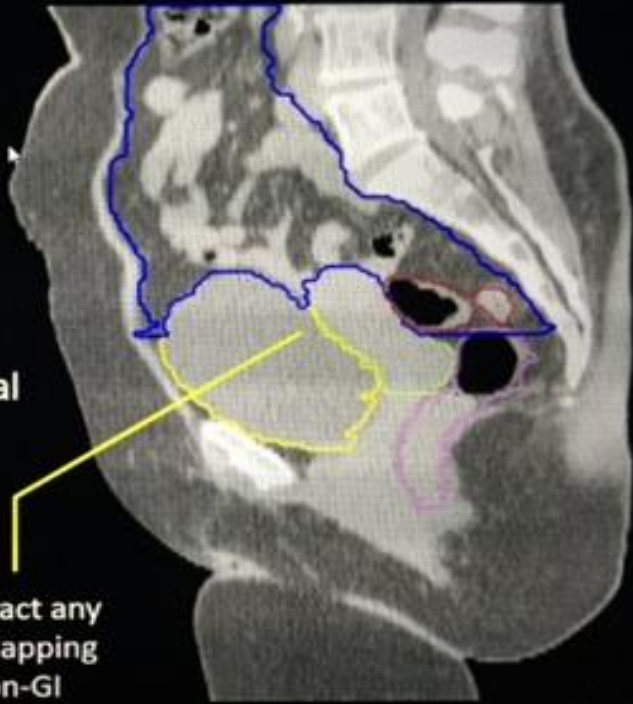
Po RT



Contour BowelBag, Colon and SmallBowel the recommended cm above PTV, not necessarily this high



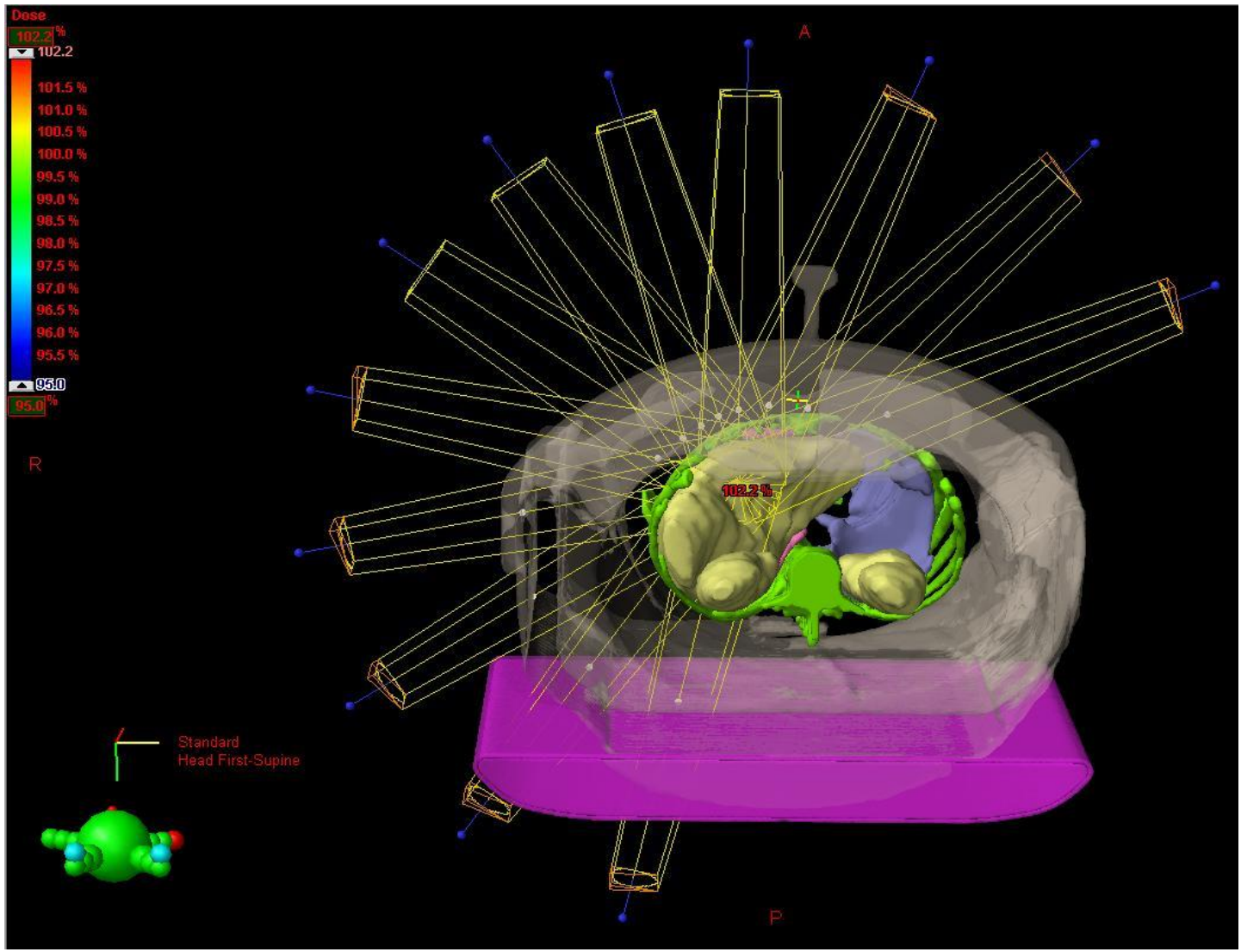
- Small Bowel
- AnoRectumSig
- Colon
- UteroCervix
- Bladder

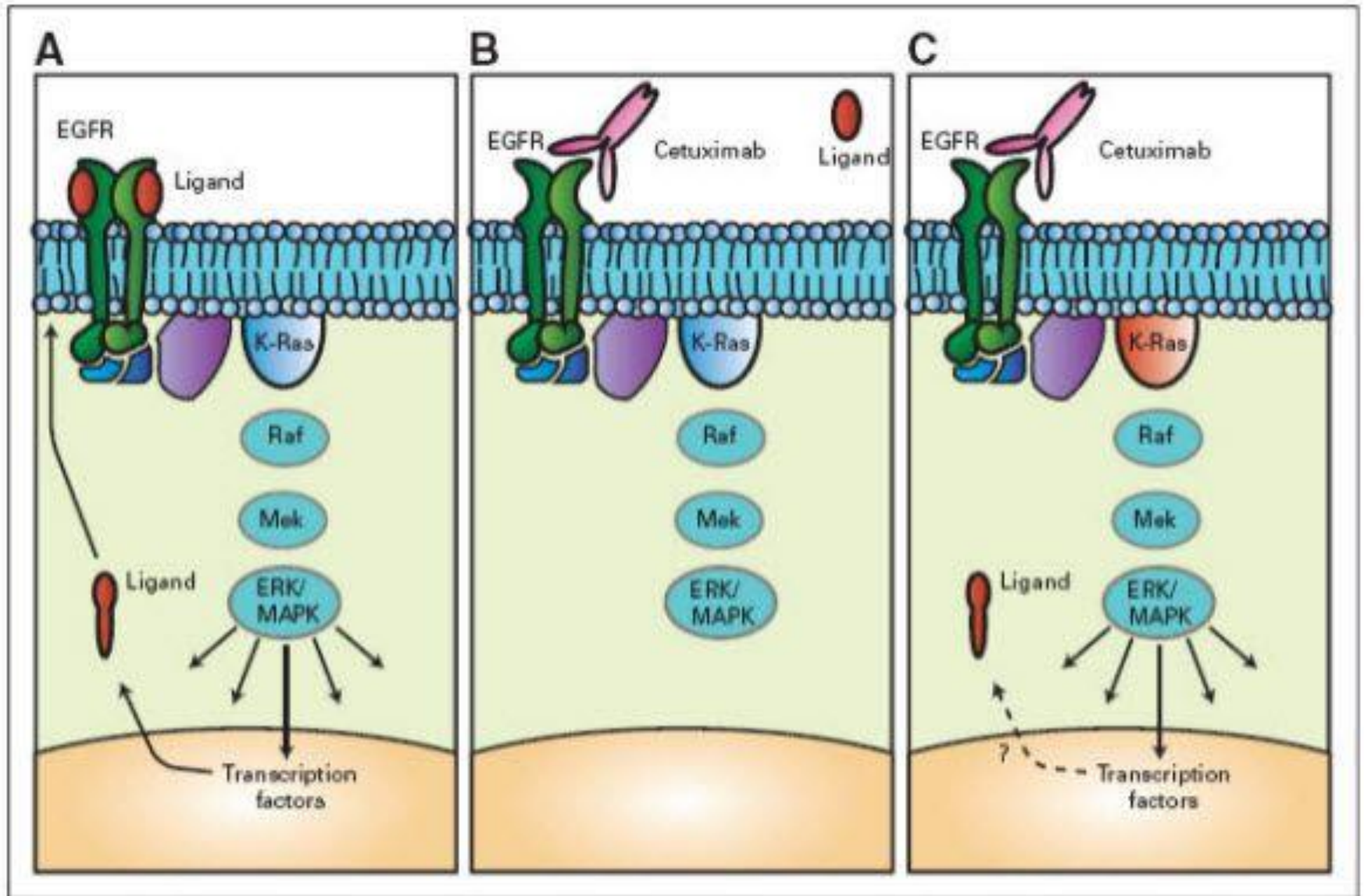


Sagittal

subtract any overlapping non-GI normal structures from BowelBag

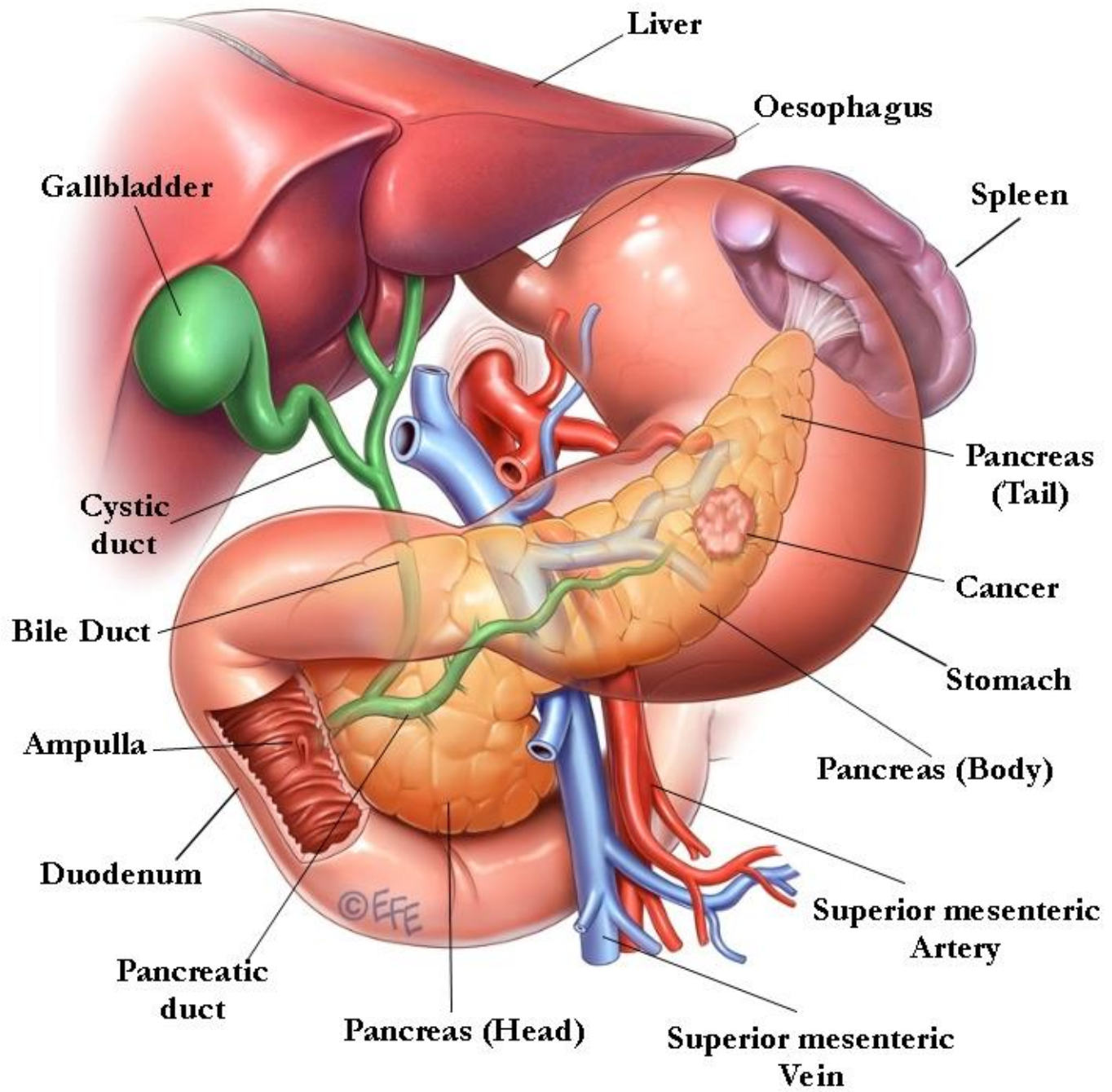
- Sigmoid
- AnoRectum
- BowelBag
- UteroCervix
- Bladder





Nádory pankreatu

- jen cca 3% všech nádorů, ale na 5. místě v mortalitě
- genetické faktory, kouření, alkoholismus, obezita, chronická pankreatitida
- dlouho bezpříznakové, později nespecifické příznaky (bolest břicha, hubnutí), později ikterus
- CT, endoskopický ultrazvuk (tenkojehlová biopsie), peroperační staging
- 80% adenokarcinomy. Nádory hlavy x těla x kaudy pankreatu
- léčba dle rozsahu: resekabilní x lokálně pokročilé x metastatický
- chirurgie – hemipankreatoduodenektomie, levostranná hemipankreatektomie a splenektomie
- adjuvantní chemoterapie ± radioterapie
- u lokálně pokročilých definitivní chemoradioterapie, dle stavu pacienta
- paliativní chemoterapie – monoterapie, nebo kombinace, dle stavu pacienta
- podpůrná a symptomatická léčba (řešení ikteru, léčba bolesti, nutriční podpora)
- medián přežití 13- 20 měsíců. 40% pacientů má v době diagnózy MTS..přežití 4-6M

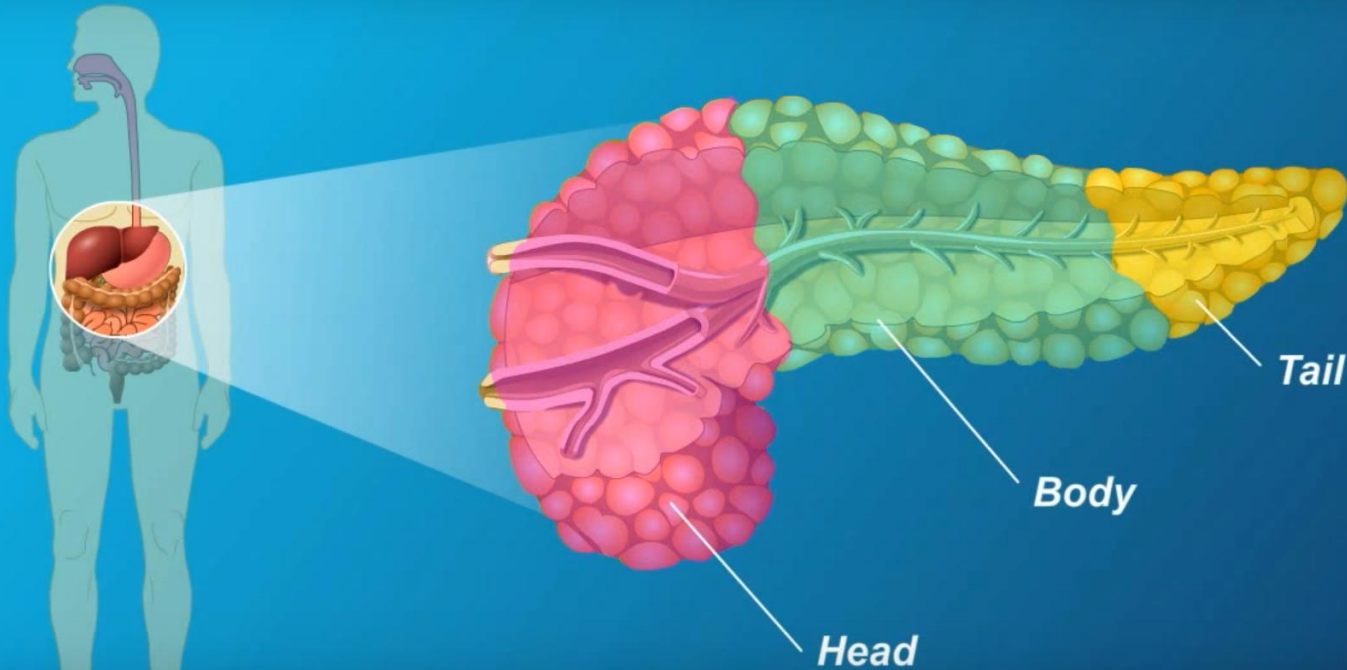


<http://www.animatedpancreaspatient.com/en/home.aspx>

https://www.youtube.com/watch?v=B_13DH7loI8

https://www.youtube.com/watch?v=YmsR_Vmom8o

The pancreas is divided into three regions



Diagnosis

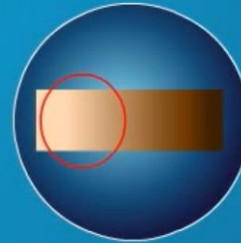
Pancreatic cancer is suspected based on a set of symptoms:



Jaundice



Dark urine



Light stool



Weight loss



Fatigue



Upper abdominal
or back pain

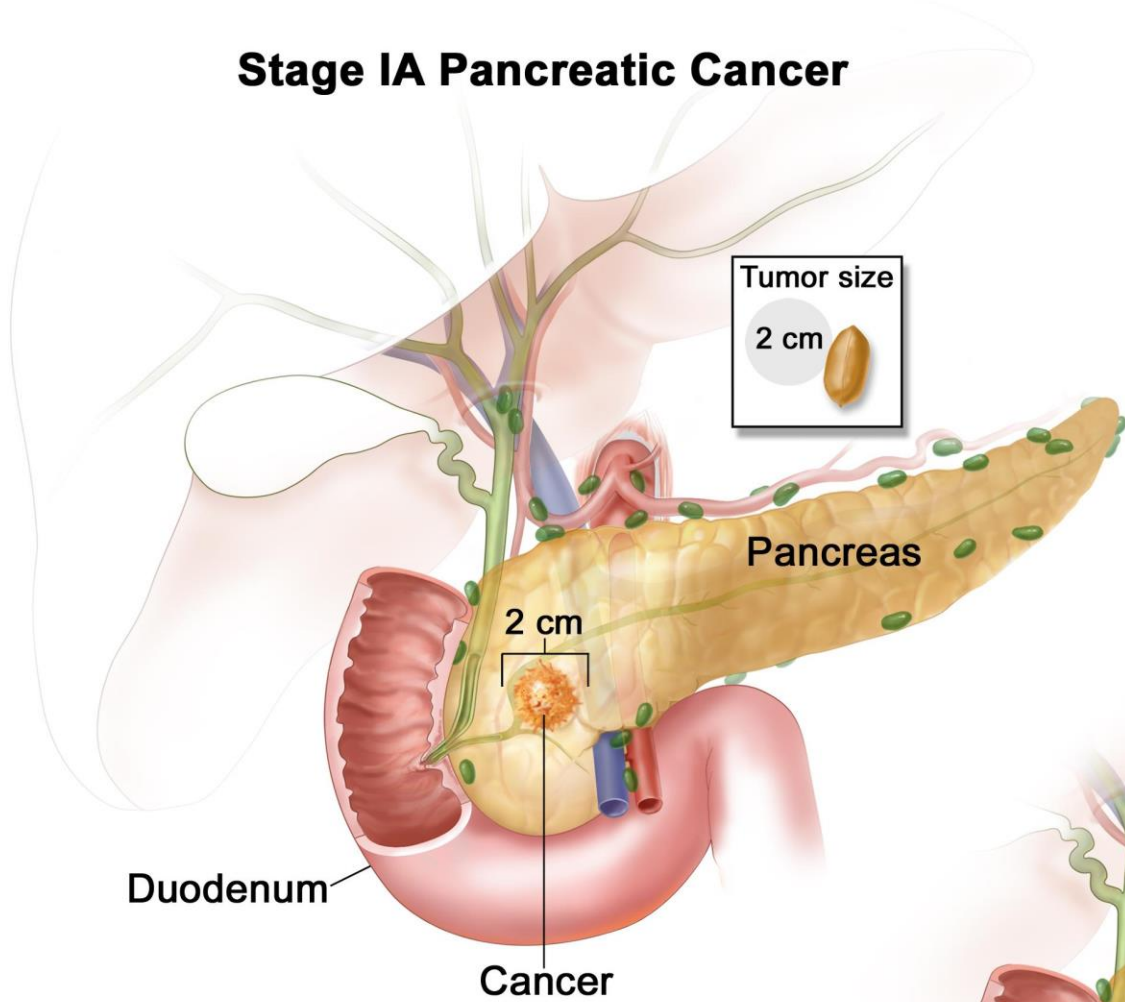


Fullness after
eating

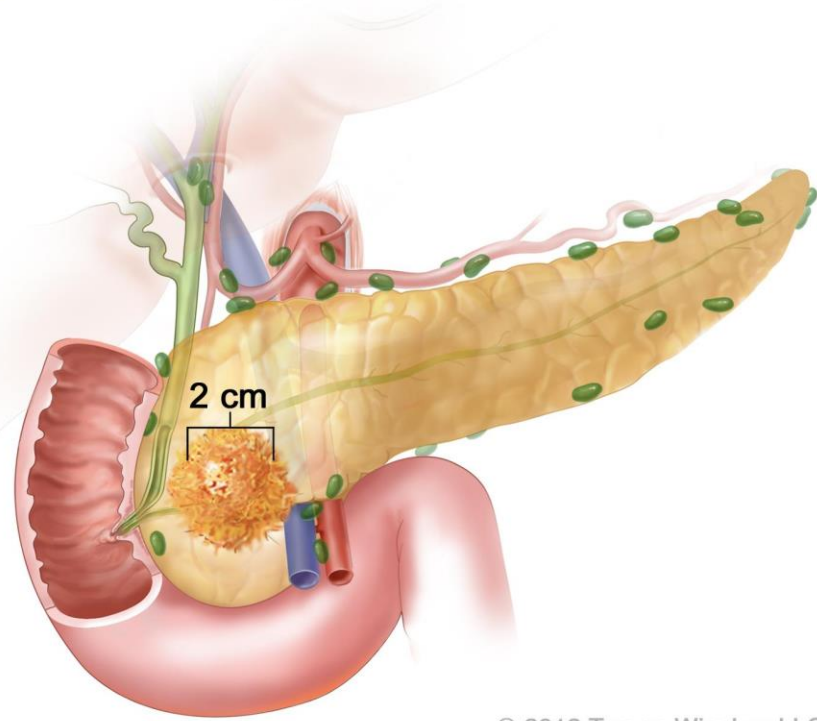


New or recent
worsening of diabetes

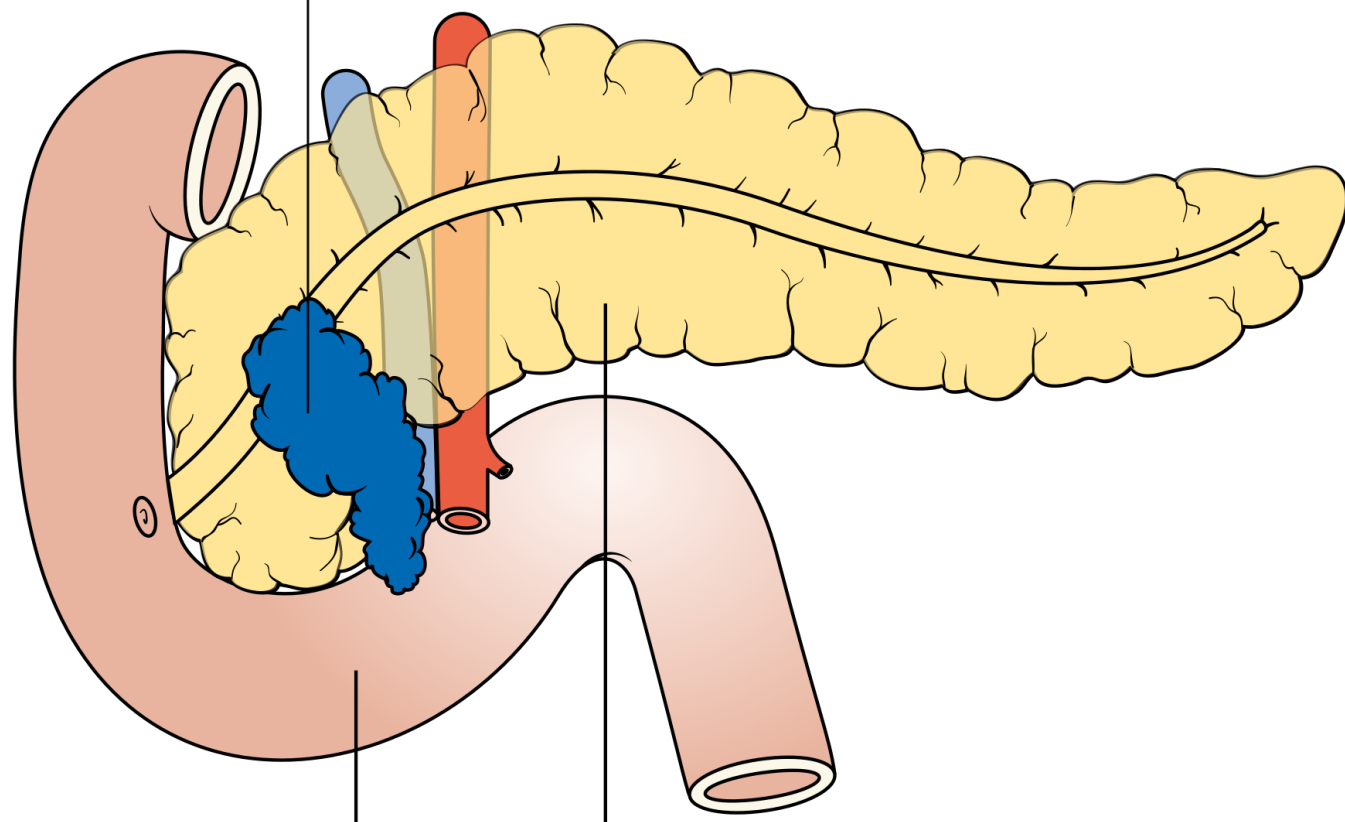
Stage IA Pancreatic Cancer



Stage IB Pancreatic Cancer



The cancer has grown outside the pancreas and into one of the blood vessels

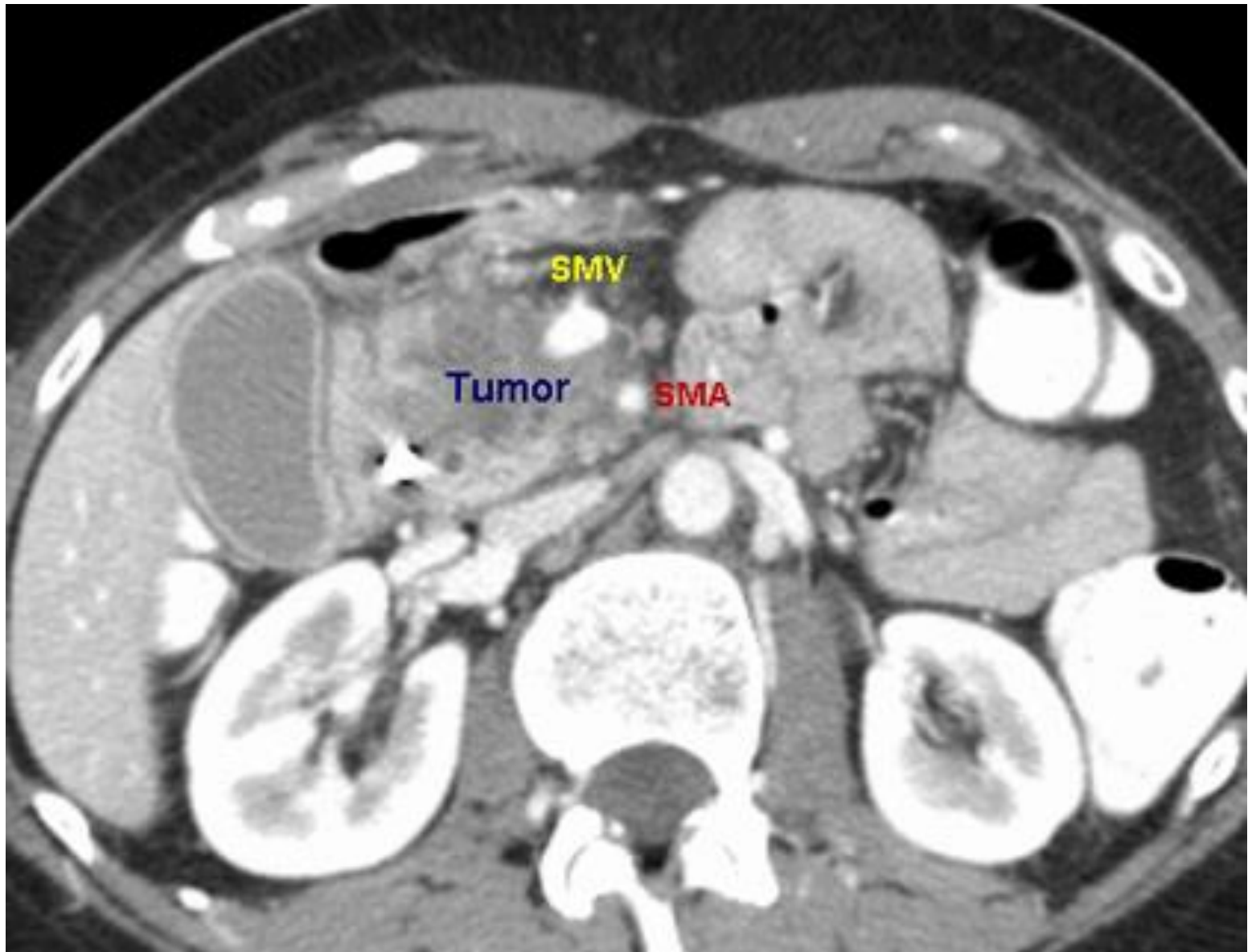


Bowel

Pancreas





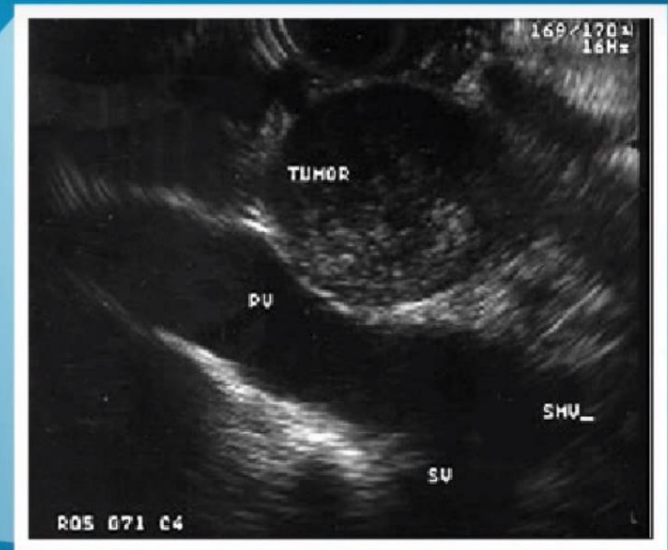
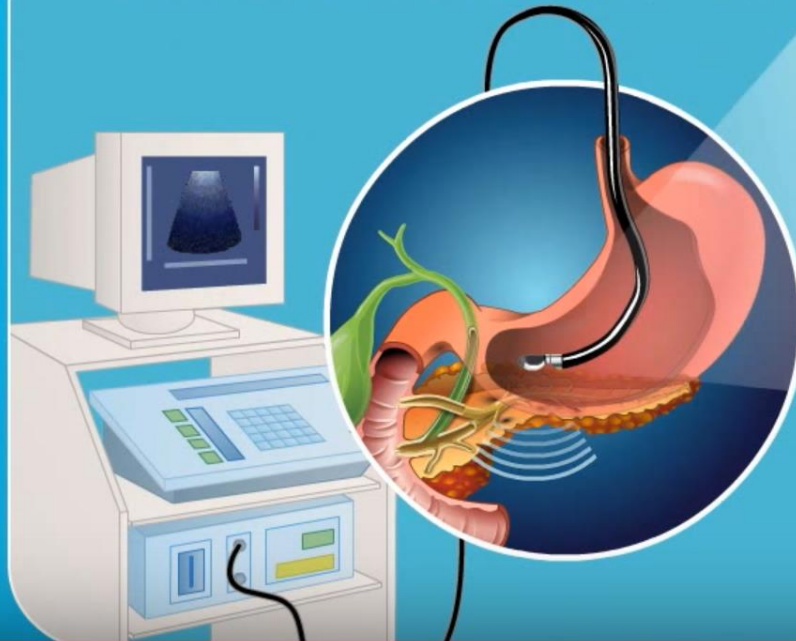




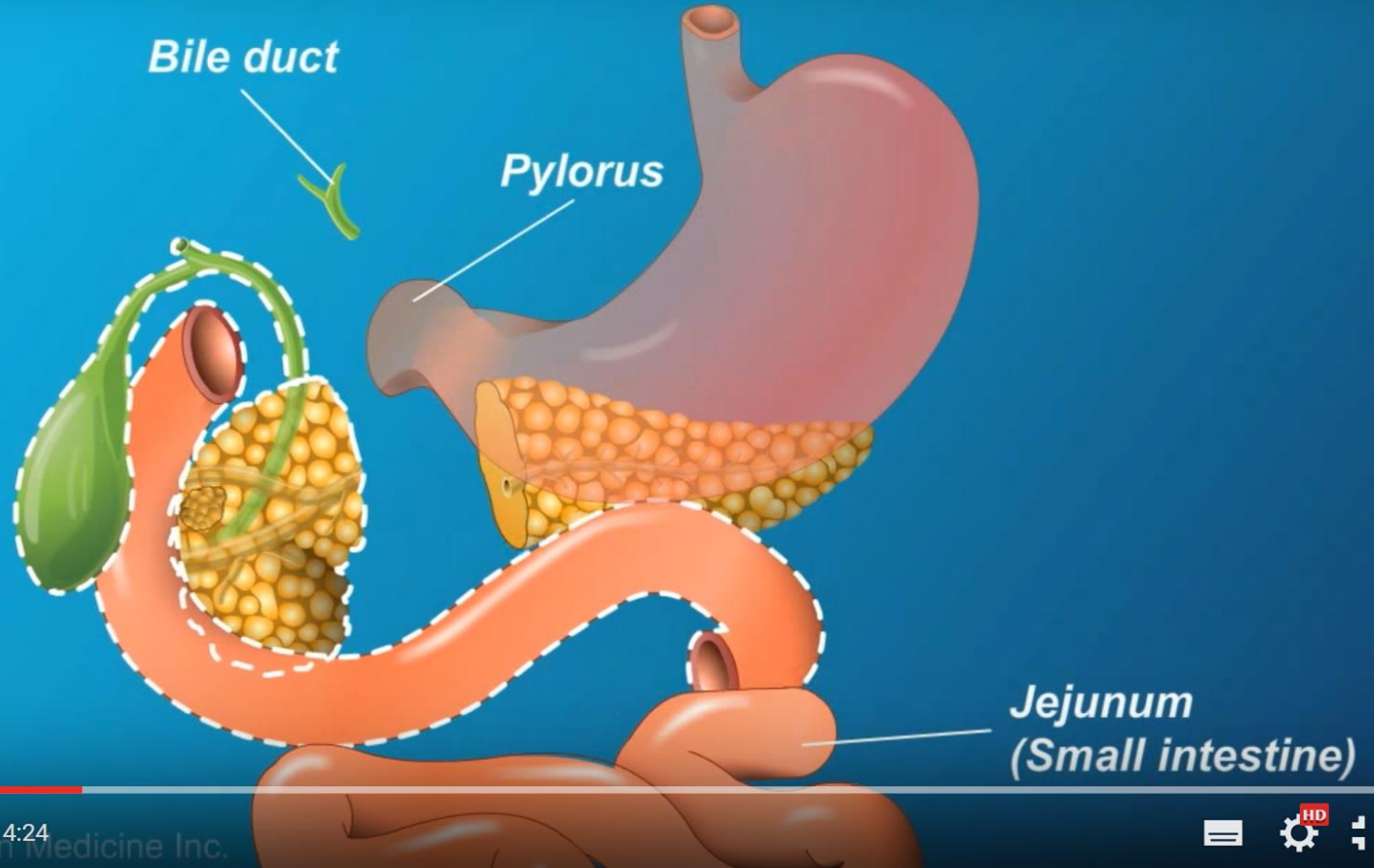
Diagnosis: Imaging



Endoscopic ultrasound (EUS)



Curative treatment: Whipple procedure

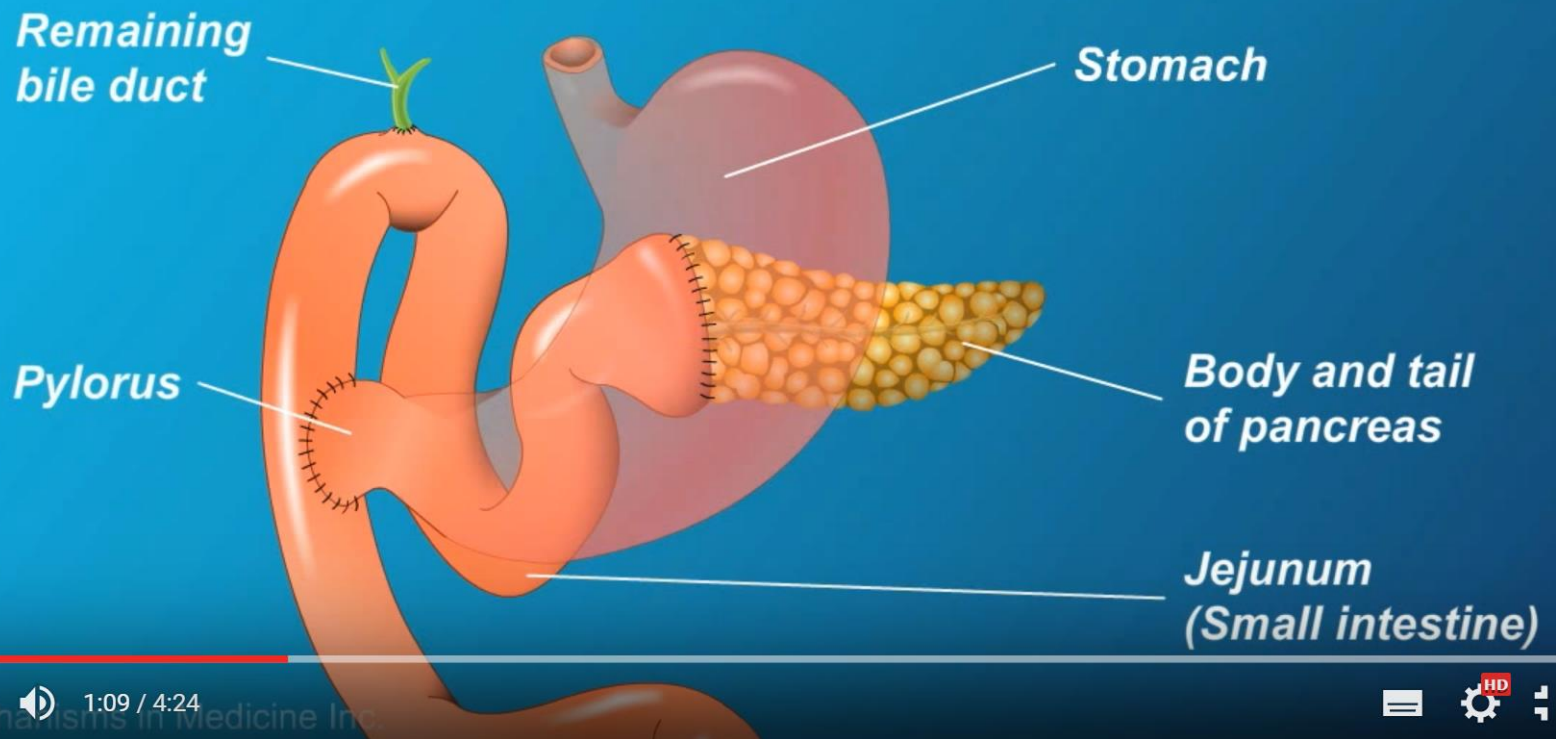


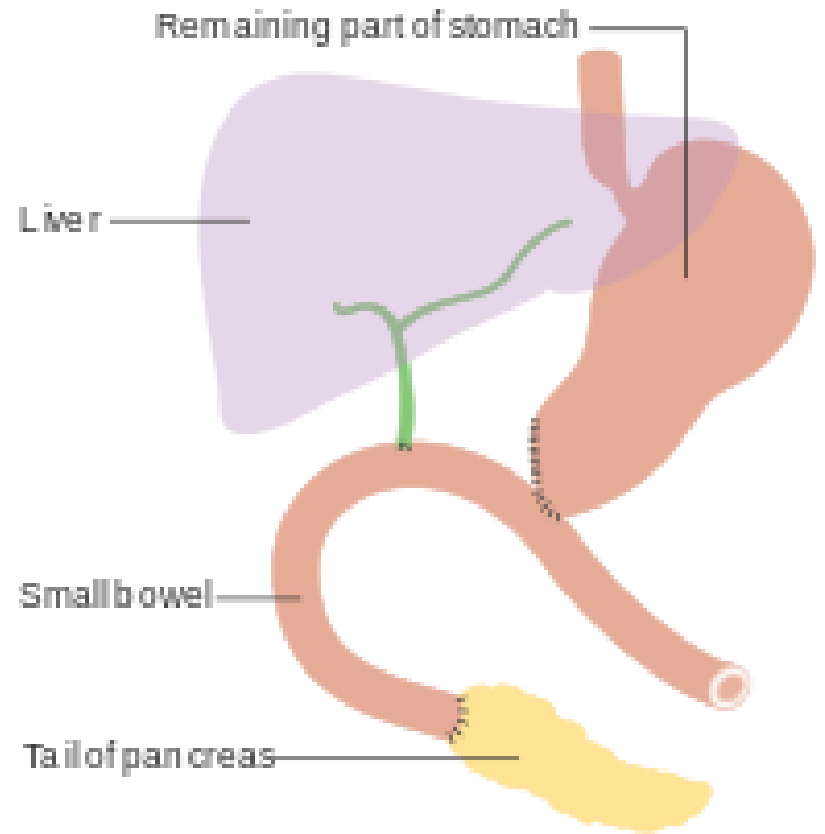
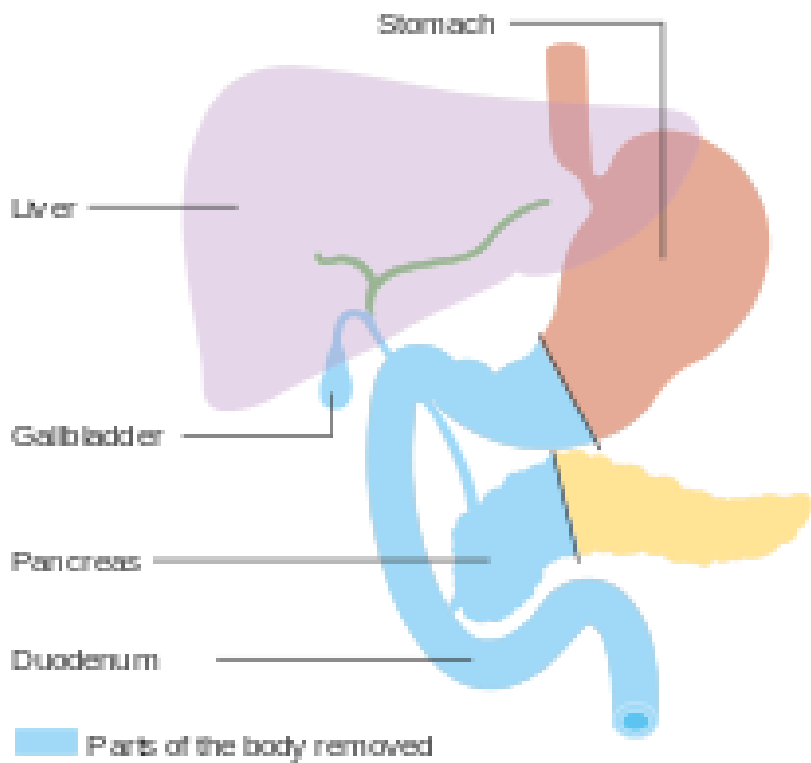
1:01 / 4:24

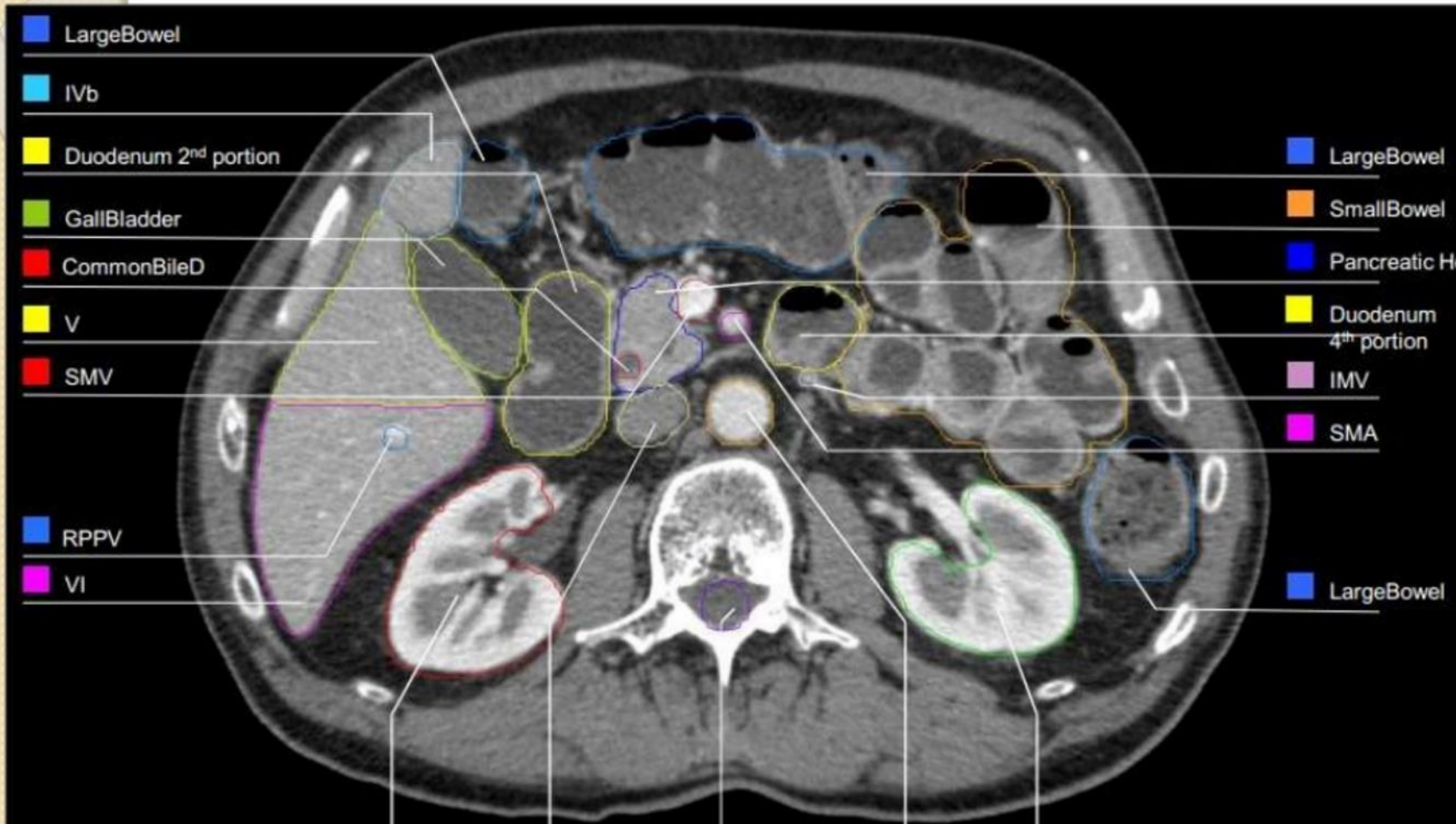


Curative treatment: Whipple procedure

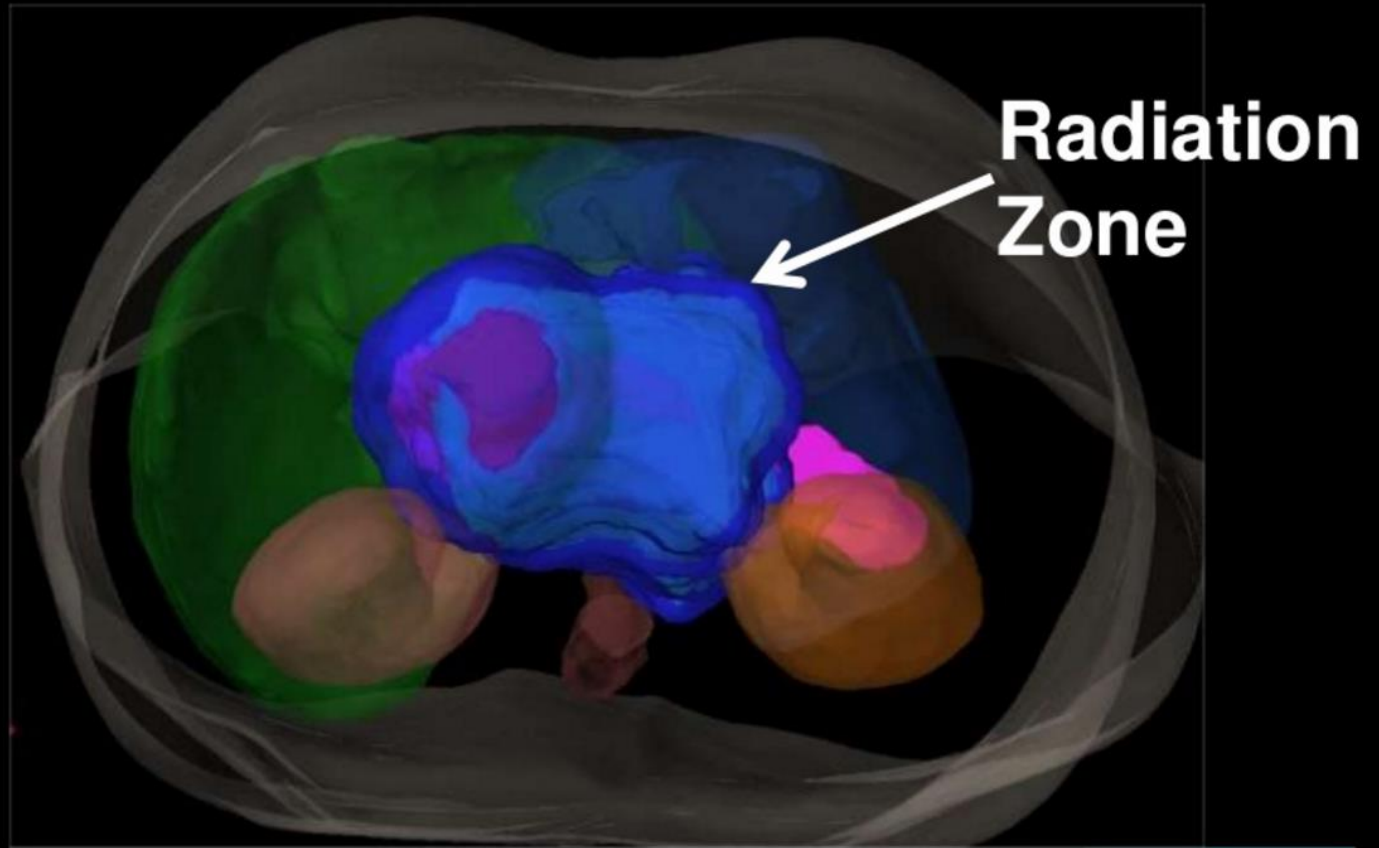
Reconstructive surgery







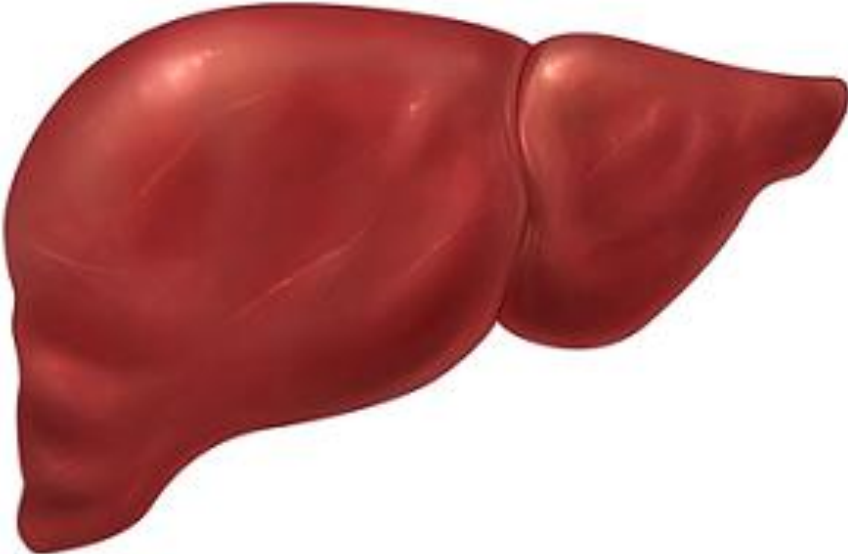
Computer Reconstruction from the CT Scan



Nádory jater

- vzácné nádory, celosvětově geografická závislost
- alkoholická cirhoza jater, virové hepatitidy (HCV, HBV – očkování), aflatoxin
- dlouho bezpříznakové, později nespecifické, společné cirhoze.
- screening rizikových pacientů schopných event. léčby
- kontrastní CT, MRI, funkční vyšetření jater – Childova-Pughova klasifikace
- léčba dle rozsahu choroby a celkového stavu pacienta
- resekce, transplantace, radiofrekvenční ablace, perkutánní etanolová injektáž, transarteriální chemoembolizace, cílená léčba (sorafenib), stereotaktická radioterapie
- 5-ti leté přežití u kurativní léčby 60%, u paliativní léčby 3 leté přežití 20-40%

Normal Liver



Liver with Cirrhosis





Cirrhotic Liver



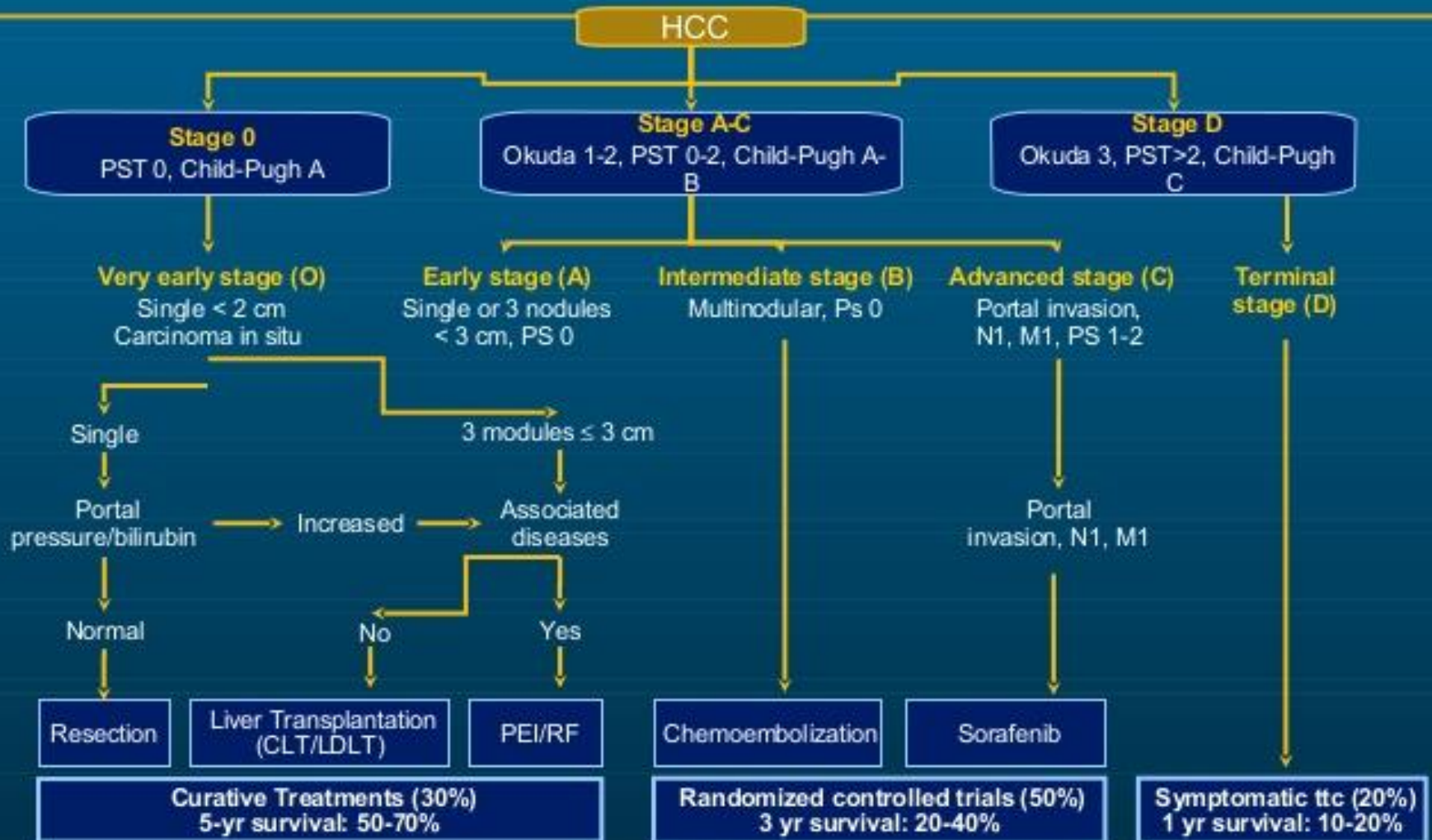
Child-Pugh Classification of Cirrhosis

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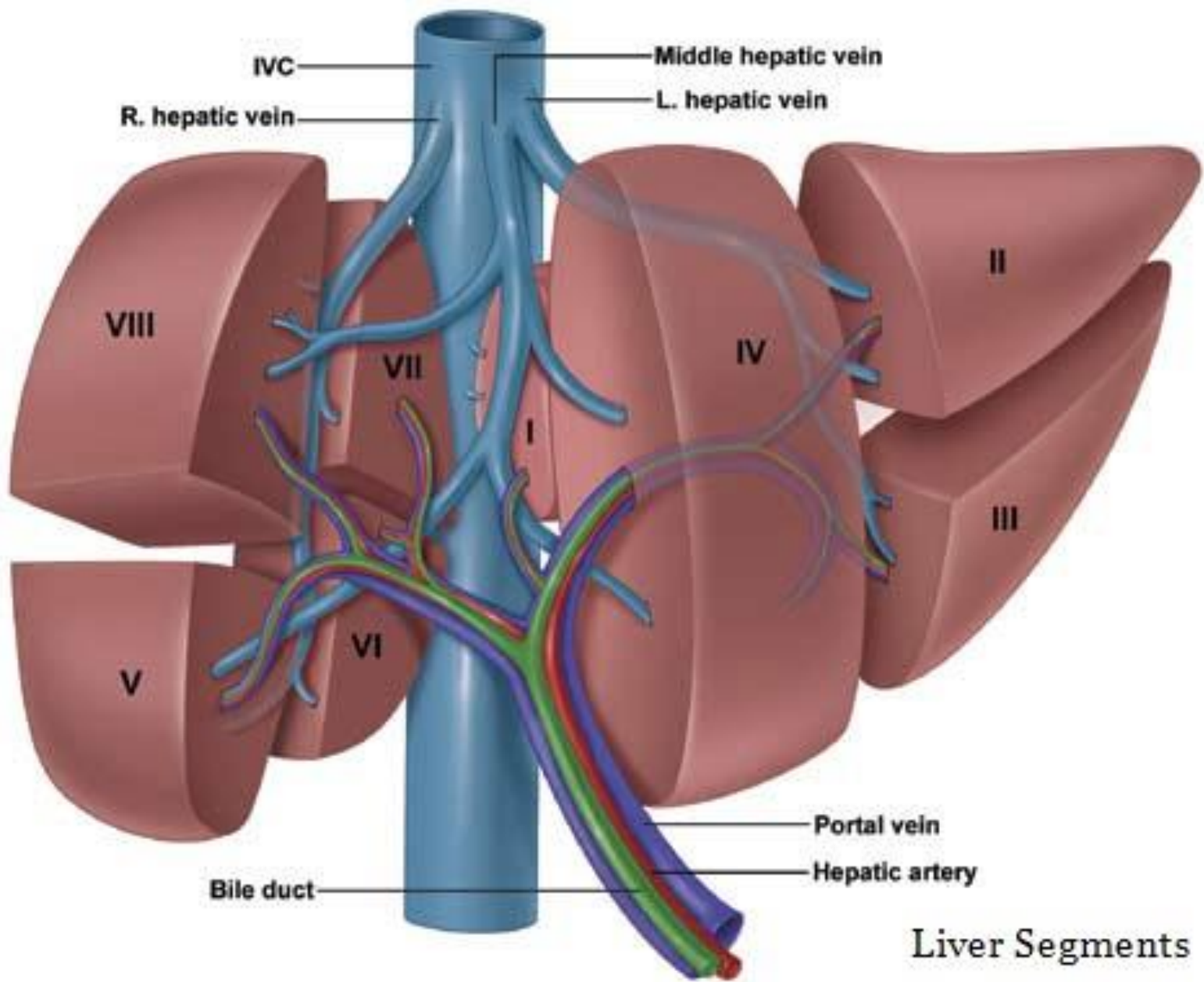
Factor	Units	1	2	3
Serum bilirubin	mol/L	<34	34-51	>51
	mg/dL	<2.0	2.0-3.0	>3.0
Serum albumin	g/L	>35	30-35	<30
	g/dL	>3.5	3.0-3.5	<3.0
Prothrombin time	seconds	0-4	4-6	>6
	prolonged INR	<1.7	1.7-2.3	>2.3
Ascites		None	Easily controlled	Poorly controlled
Hepatic encephalopathy		None	Minimal	Advanced

The Child-Pugh score is calculated by adding the scores of the five factors and can range from 5 to 15. Child-Pugh class can be A (a score of 5-6), B (7-9), or C (10 or above). Decompensation indicates cirrhosis with a Child-Pugh score of >7 (class B). This level has been the accepted criterion for listing liver transplantation.

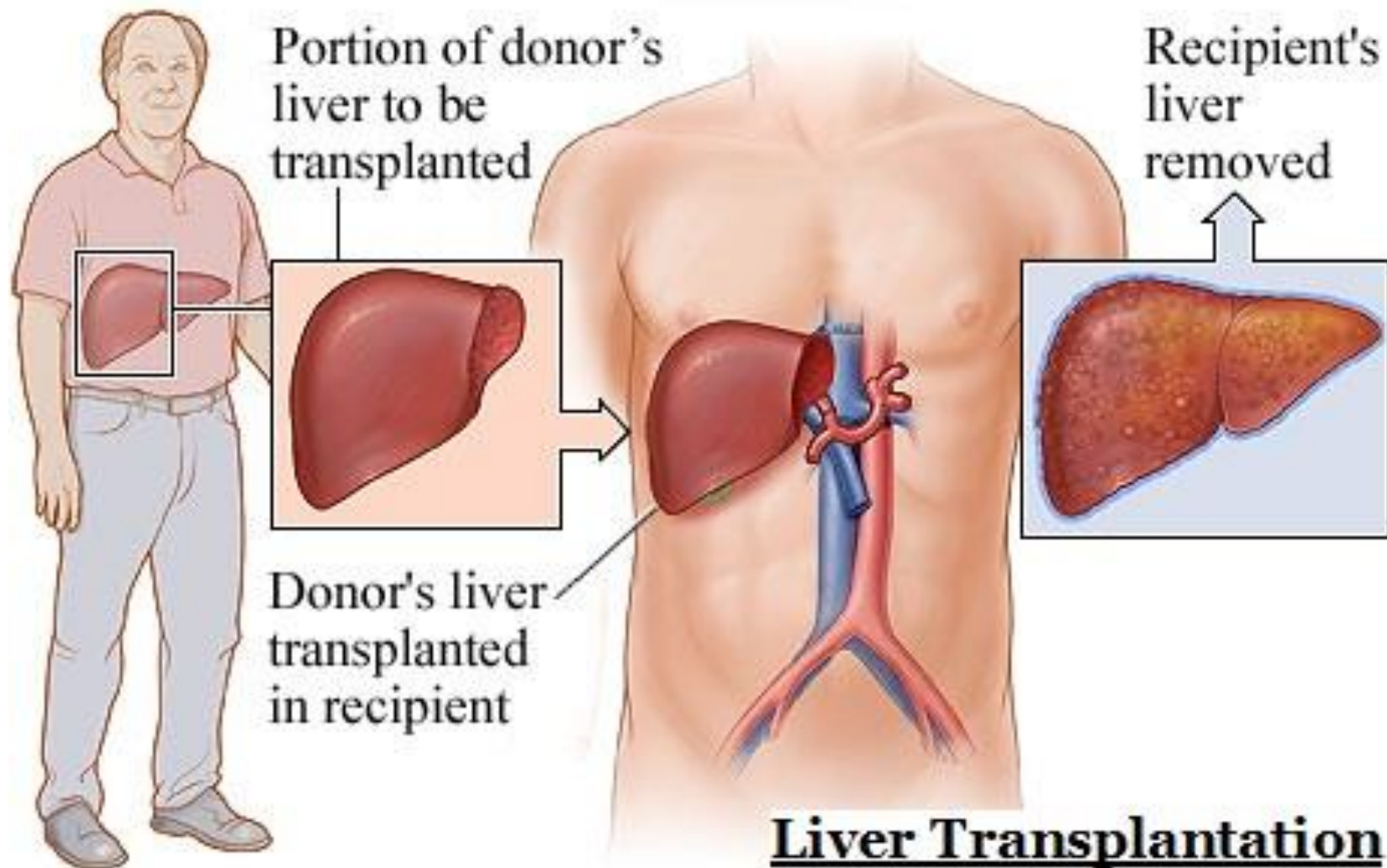
BCLC Staging and Treatment Schedule

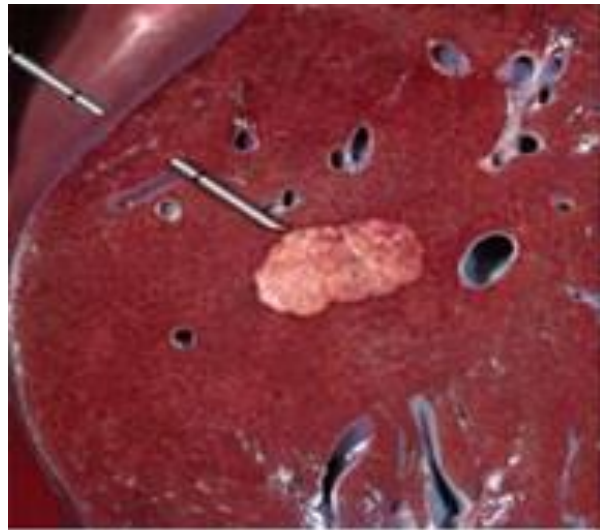


ttc: treatment



Liver Segments

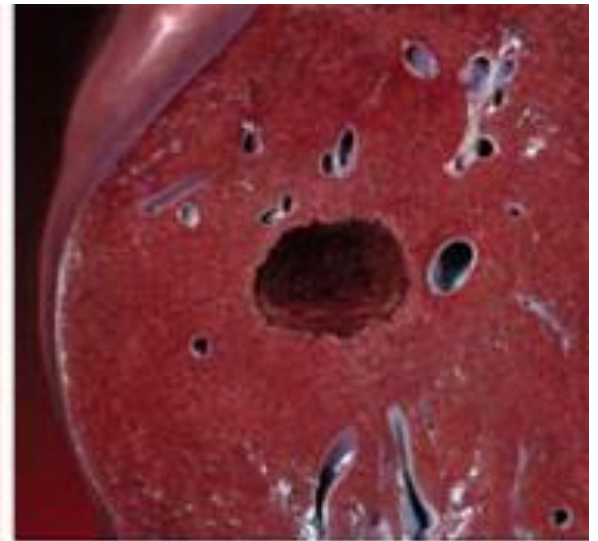




The radiofrequency probe is inserted into the liver tumor.

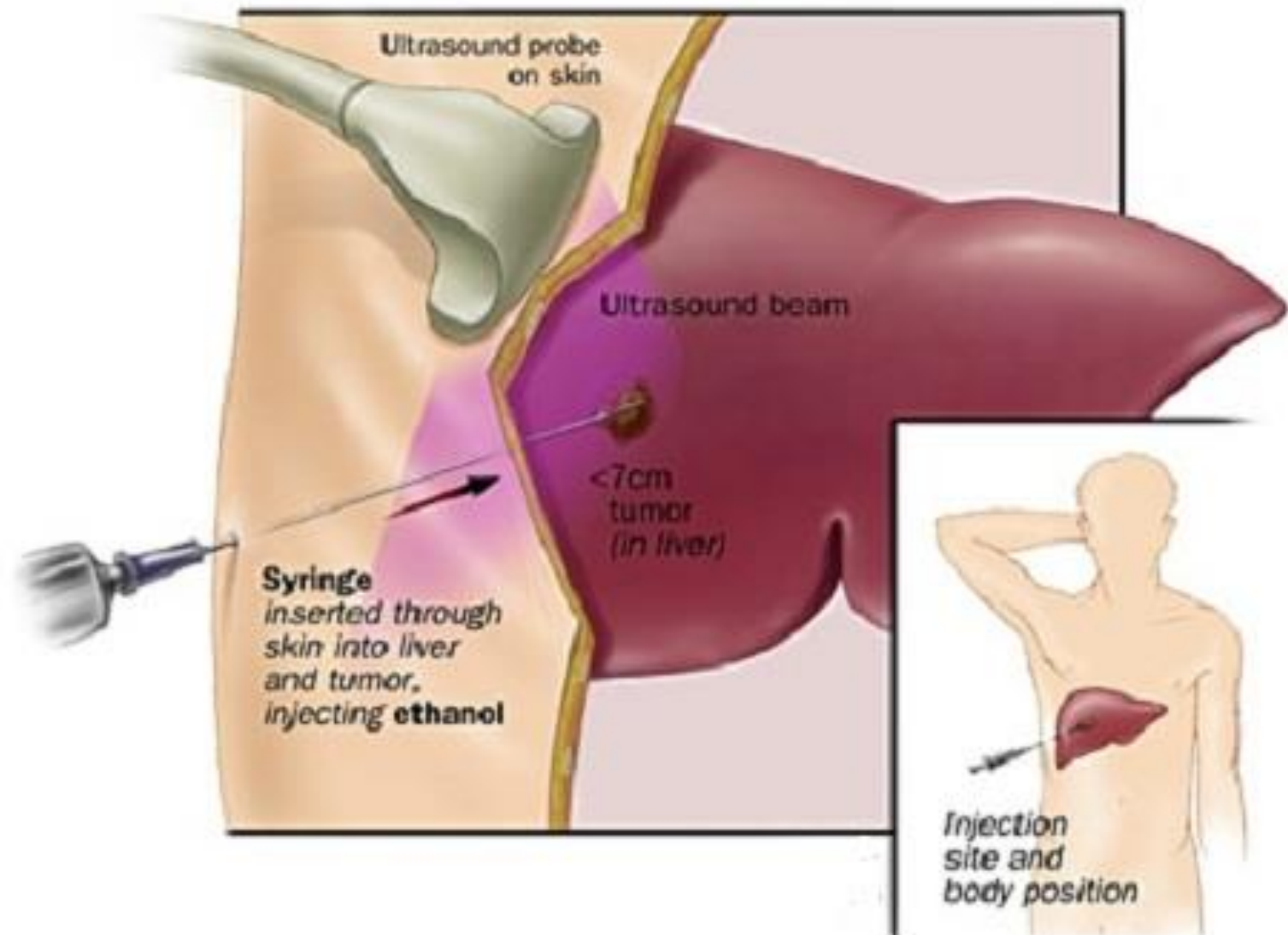


The surgeon deploys electrodes from the probe which deliver radiofrequency energy. This high heat causes death of tumor cells.

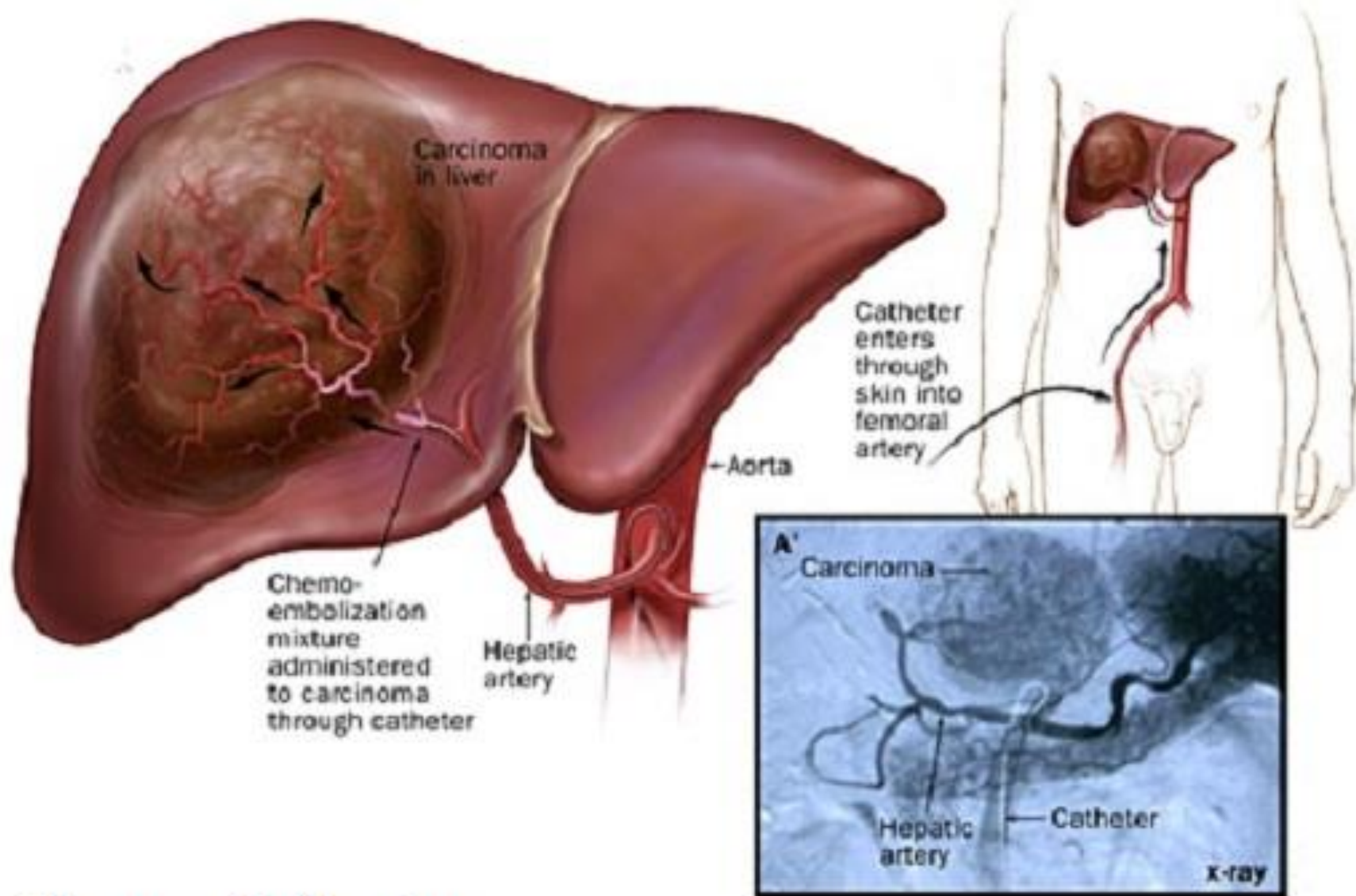


Following the procedure, the tumor cells are destroyed and will eventually be replaced by scar tissue.

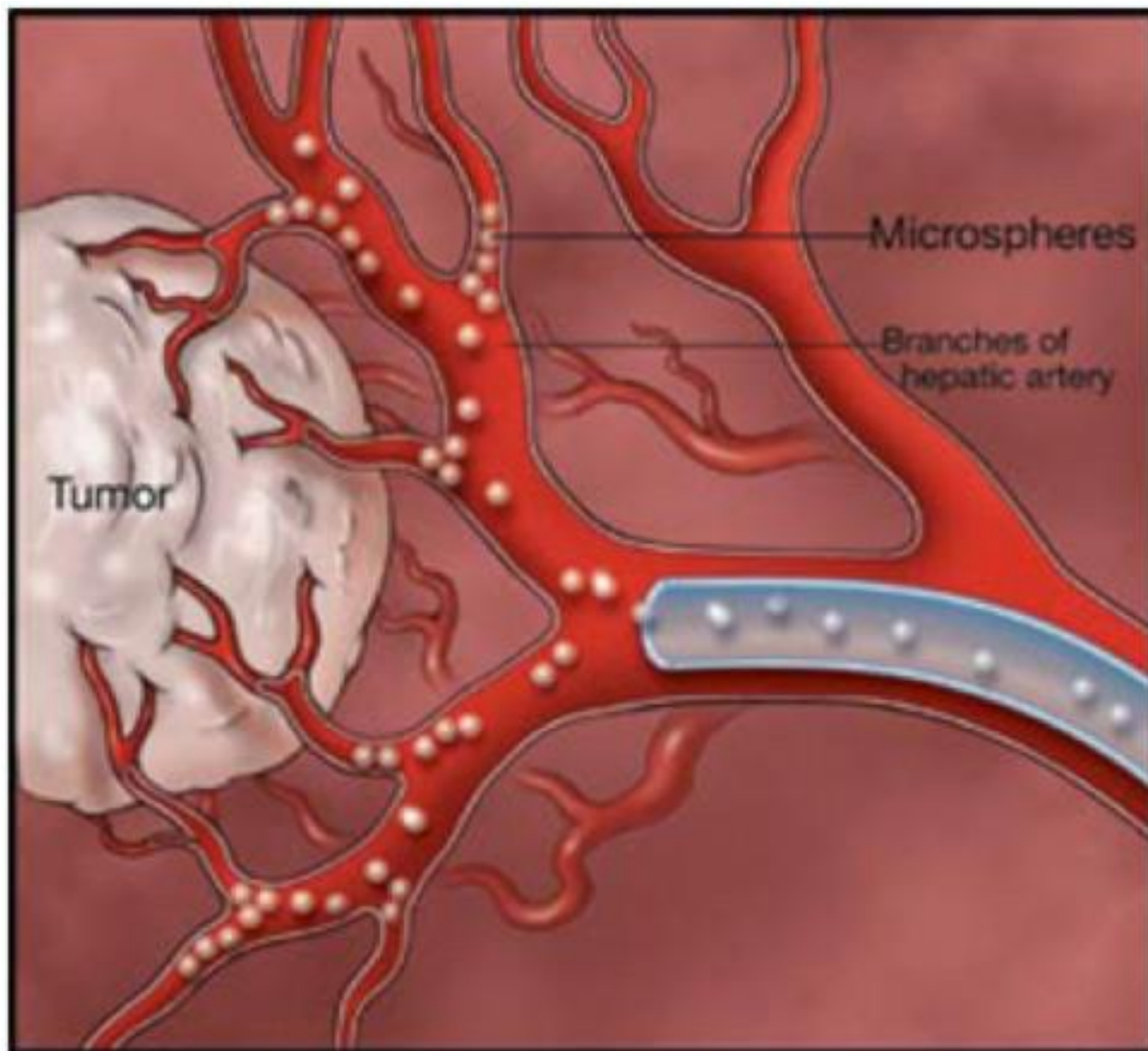
Radiofrequency Ablation (RFA)



Percutaneous ethanol or acetic acid ablation



Chemoembolization



Microspheres injected during transarterial therapy "lock in" chemotherapy and block the blood supply to the tumor.

