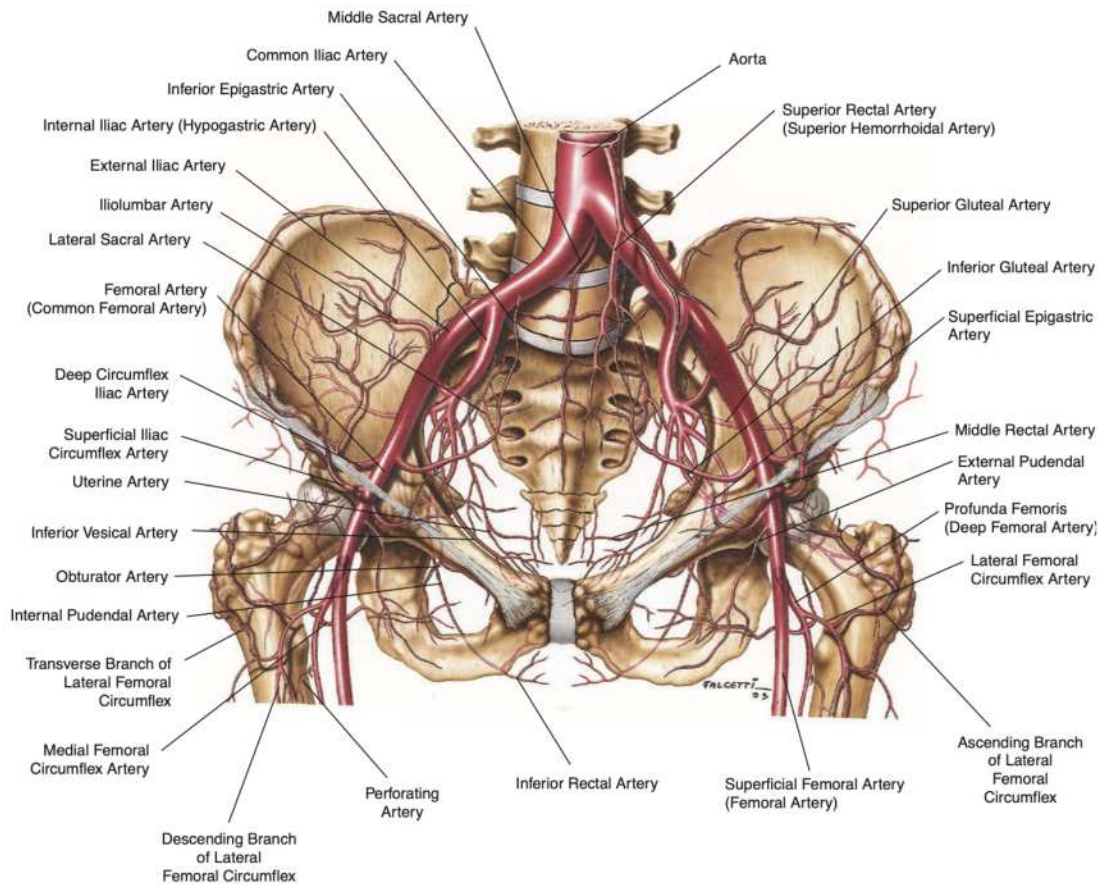


PAE e. prostata arterite embolisatsioon

Veniamin Metsa
I aasta resident



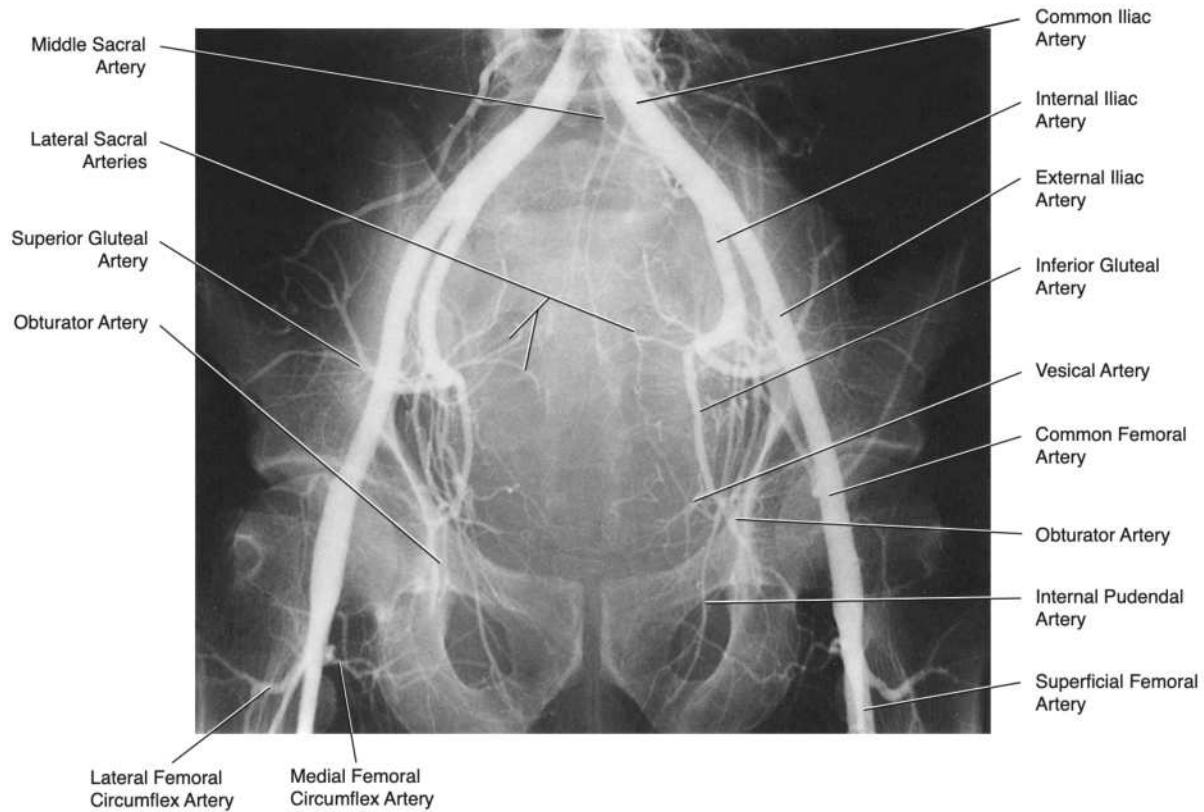




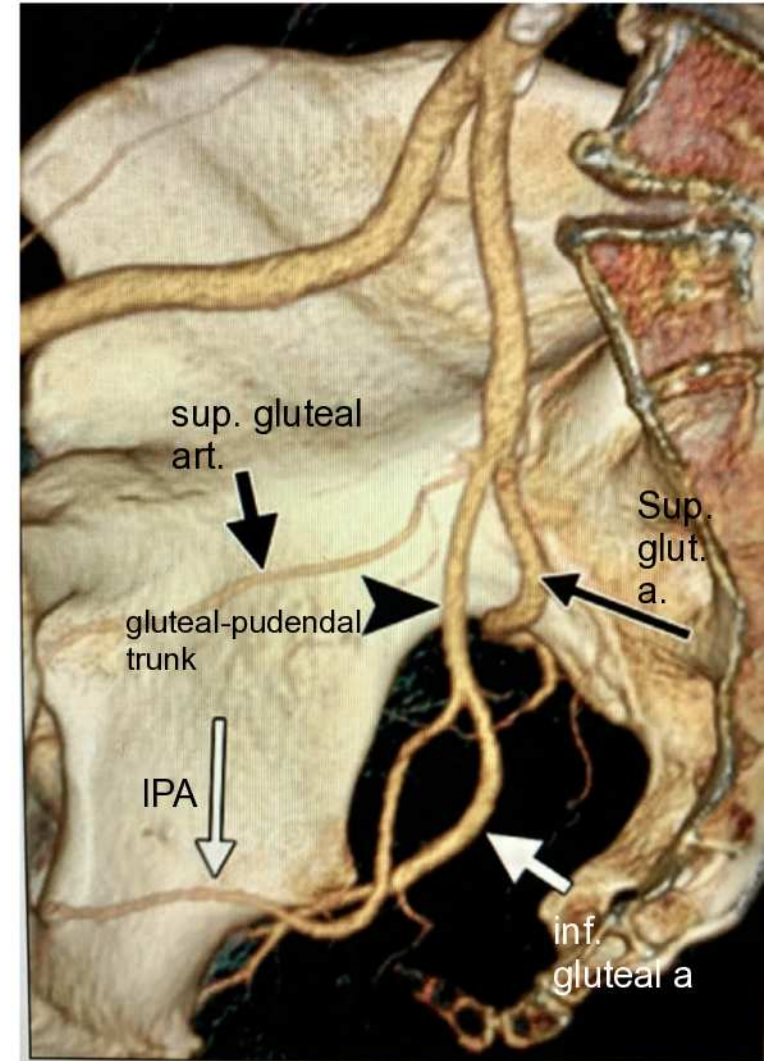
Figure 19.7. Pelvic angiography in a patient with occlusive disease, showing the development of the collateralization in the pelvis.

Yamaki klassifikatsioon: tüüp A

IIA jaguneb 2ks haruks:

- Arteria glutea superior
- Arteria glutea inferior'i ja IPA ühine tüvi

Kõige sagedasem variant - ca 79,5%



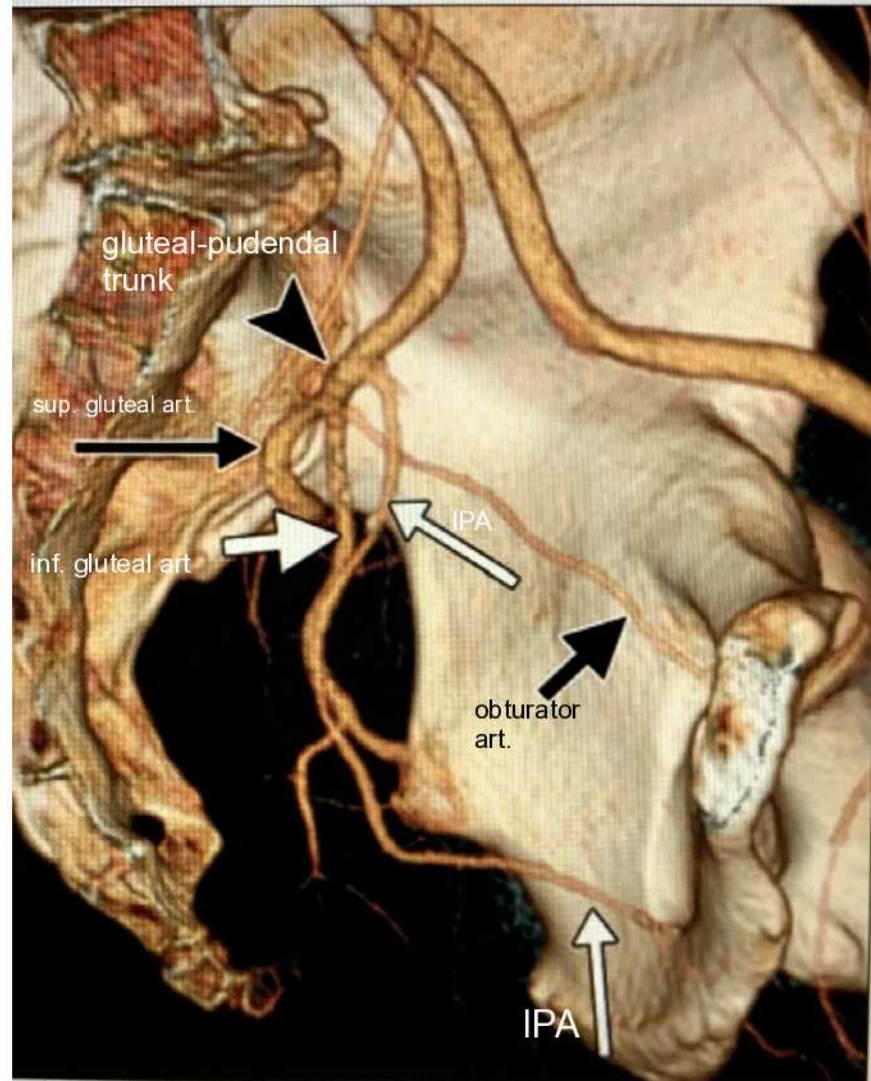
Tüüp B

IIA jaguneb 2ks:

- IPA
- Gluteaalarterite ühine tüvi, mis edaspidi jaguneb arteria glutea superior'iks ja inferior'iks

Selles rühmas IIA eesmised harud väiksemad, kuna koosnevad ainult IPAst; tagumised harud koosnevad arteria glutea superior'ist ja inferior'ist. Esineb 15%.

Tech Vasc Interv Radiol. 2020 Sep;23(3):10068

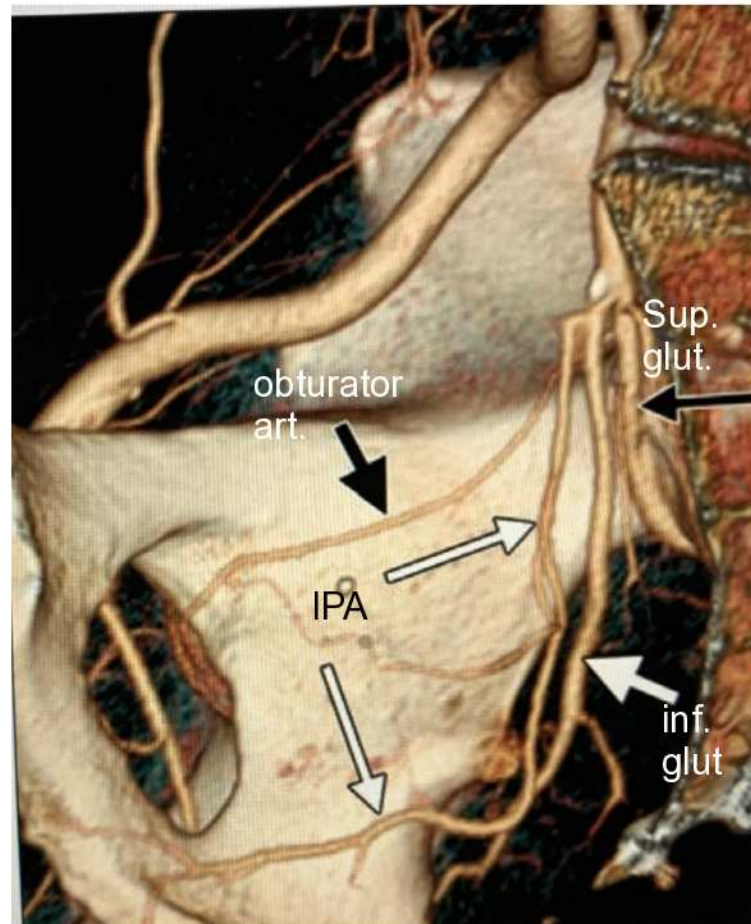


Tüüp C

IIA jaguneb 3ks haruks:

- Arteria glutea superior
- Arteria glutea inferior ja
- IPA.

Esineb 5,3% patsientidest.



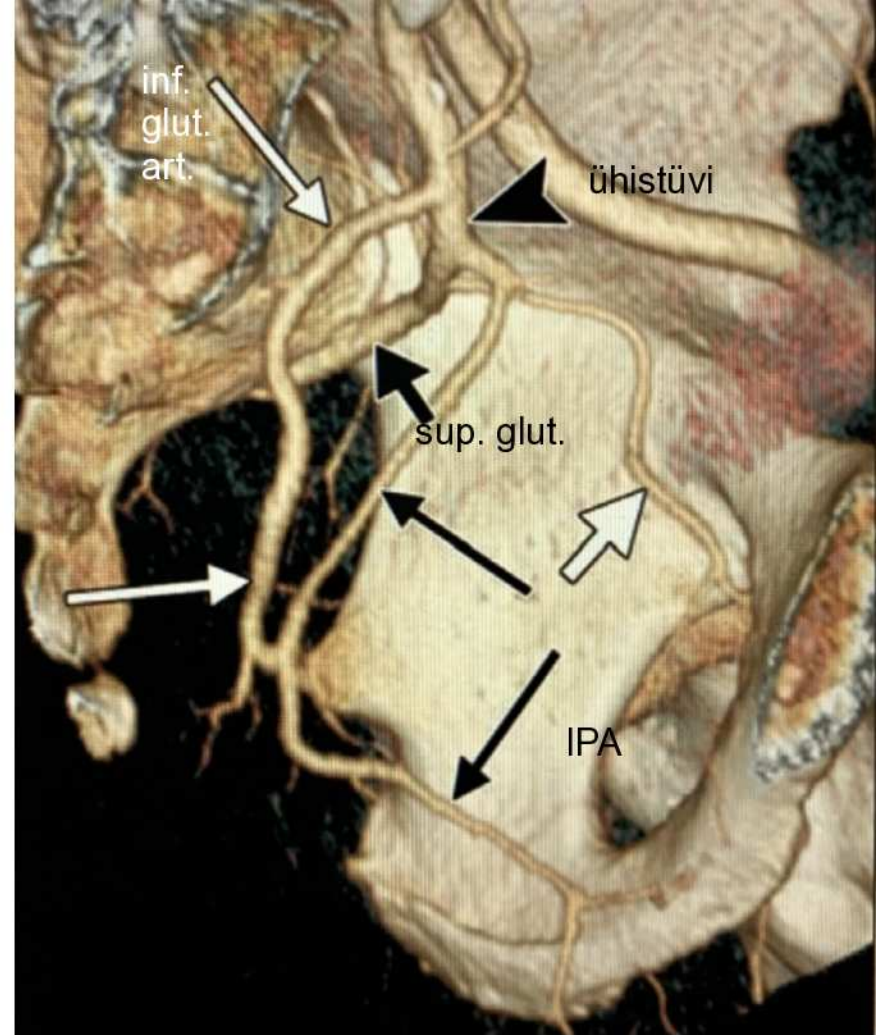
Tüüp D

IIA eesmised harud:

- Ühine tüvi, millest saavad alguse IPA ja arteria glutaea superior

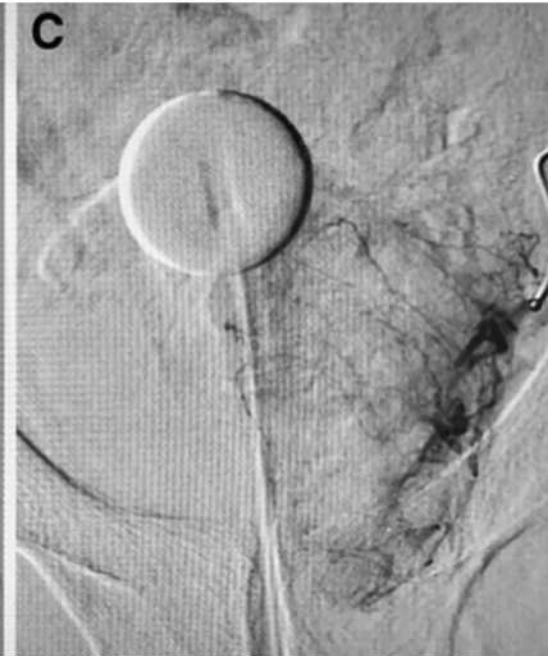
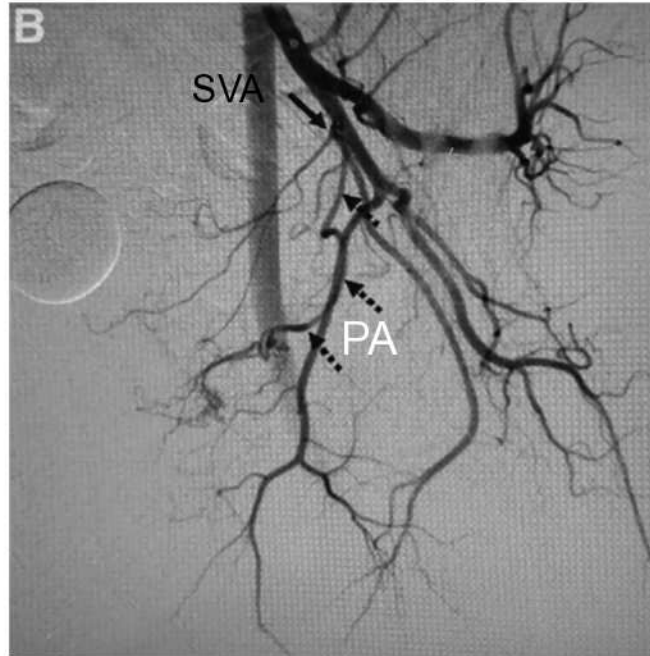
Tagumised harud: arteria glutaea inferior.

Esineb 0,2% patsientidest.



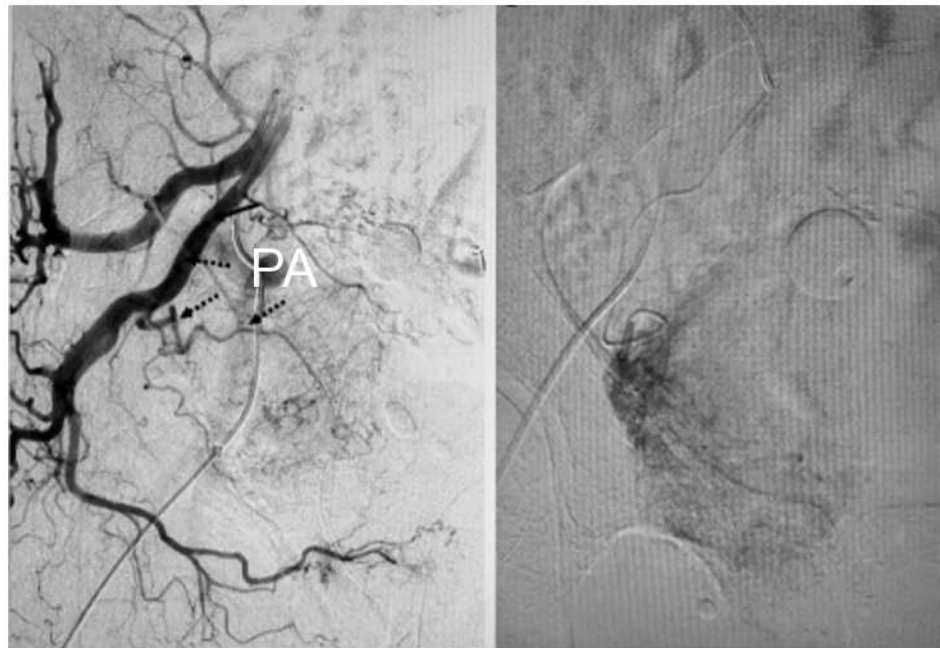
De Assis et al klassifikatsioon: tüüp 1

IIA annab alguse ühisele tüvele, millest saavad alguse SVA ja IVA (arteria vesicalis superior ja inferior). IVA-st algab PA (eesnäärme arter).



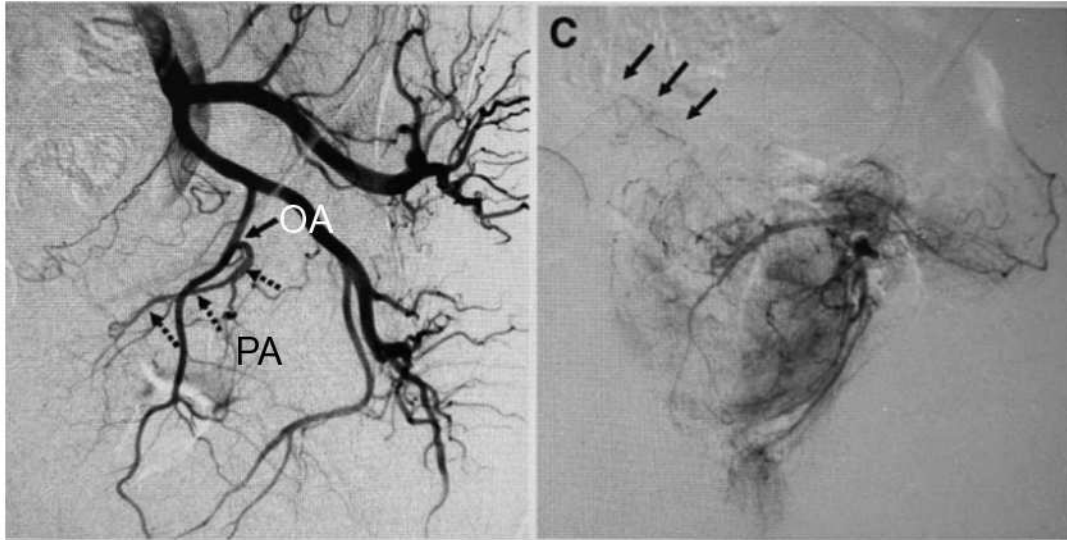
Tüüp 2

PA harud saavad alguse otse IIA eesmistest harudest. SVA asub ülal.



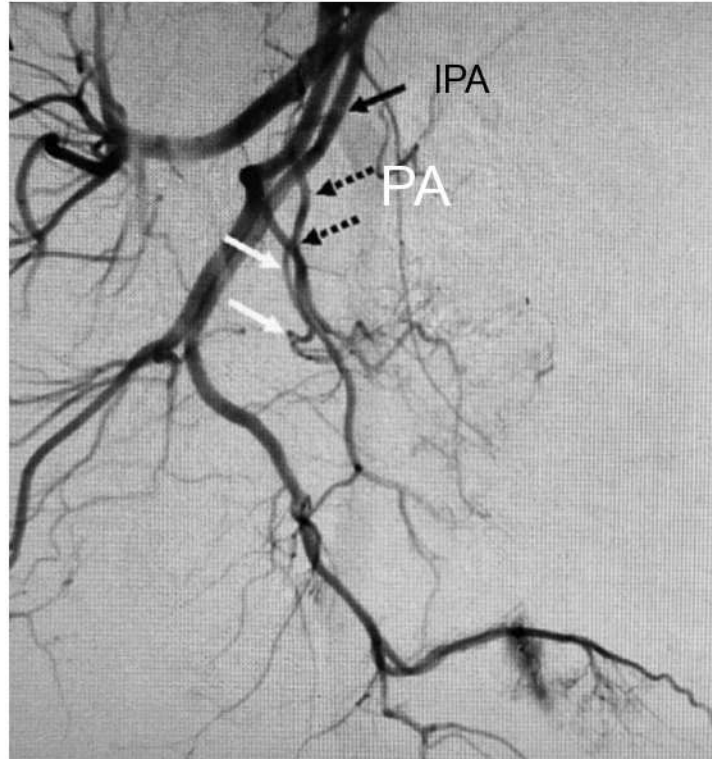
Tüüp 3

PA saab alguse OAst. Tavaliselt PA algab OA ülemisest või keskmisest kolmandikust.



Tüüp 4

PA harud saavad alguse
IPA ülemisest
kolmandikust või
keskmisest
kolmandikust.



Tüüp 5 - haruldased variandid

Table 2 De Assis Type V Anatomy (Rare or Less Common Origins of the PA). (286 Pelvic Sides Evaluated)

Author	PA Origin	Prevalence (N)
De Assis (2015)	alPA	2.1% (6)
	Trifurcation of Anterior Division IIA	1.8% (5)
	Quadrifurcation of Anterior Division of IIA	0.35% (1)
	Inferior epigastric artery	0.35% (1)
	Posterior division of IIA	0.35% (1)
	Distal segment of the IPA	0.35% (1)
	Prox 1/3 Inferior Gluteal Art	0.35% (1)

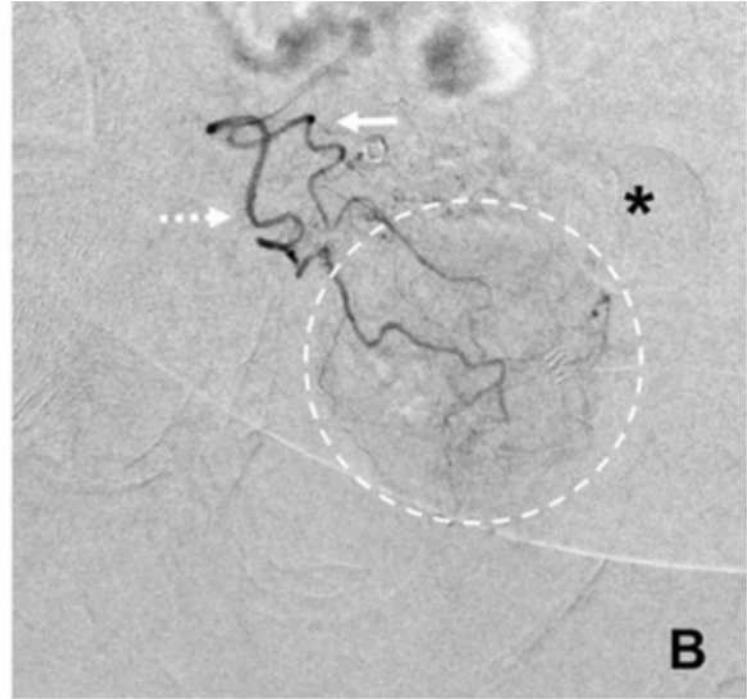
Eesnäärme arteri alatüübid

Pattern A - varustab ainult eesnääret

Pattern B - varustab ka peenist

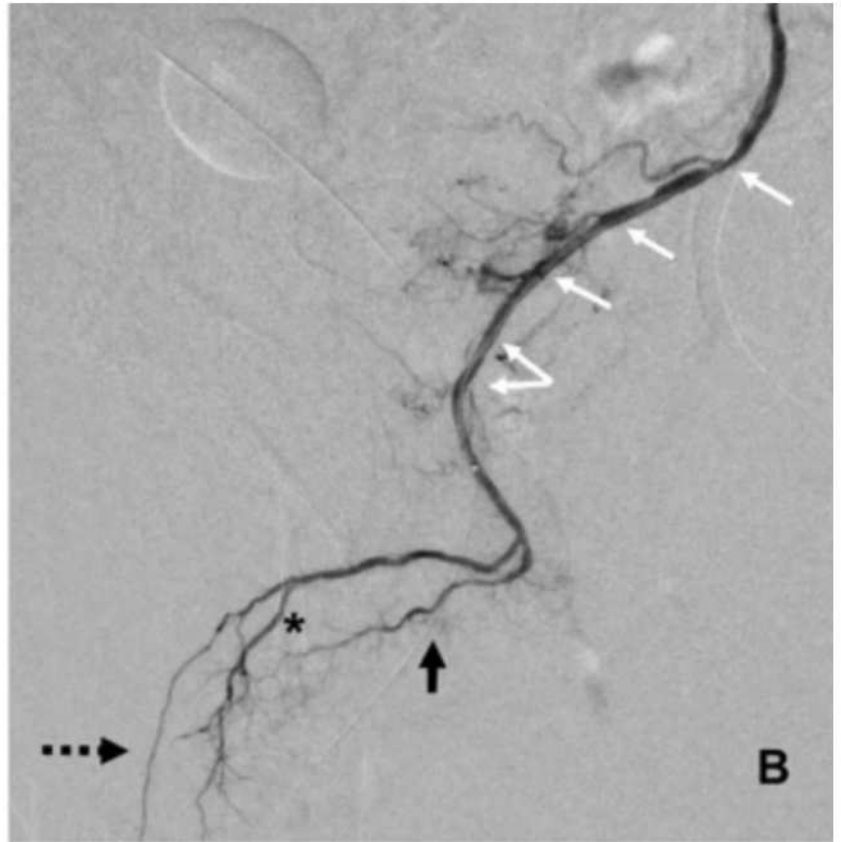
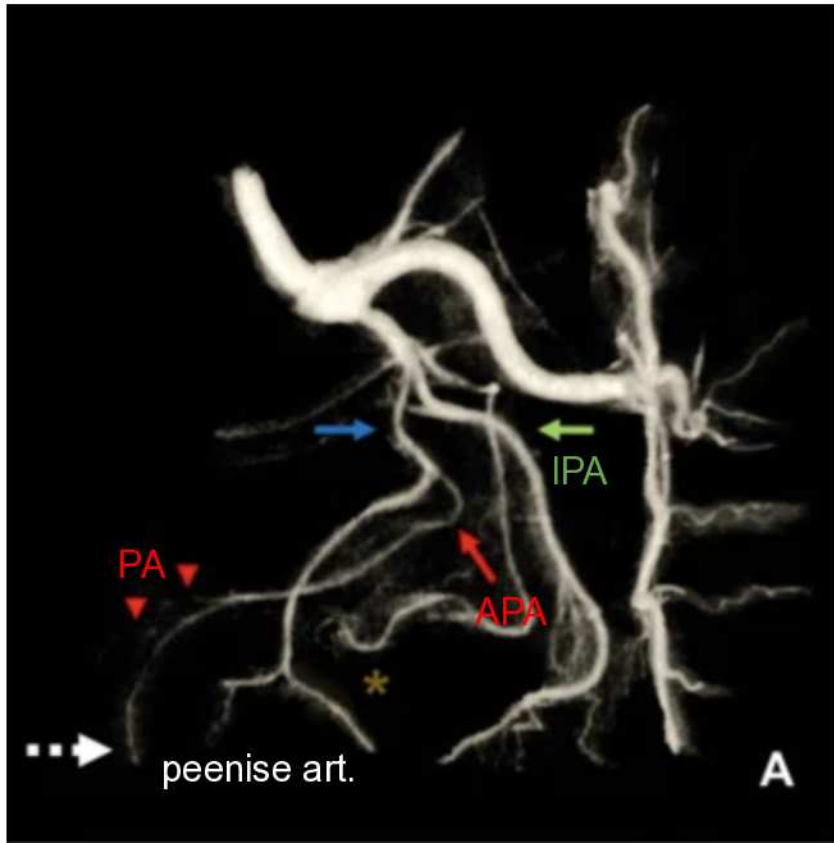
Pattern C - varustab rectumit

Pattern A



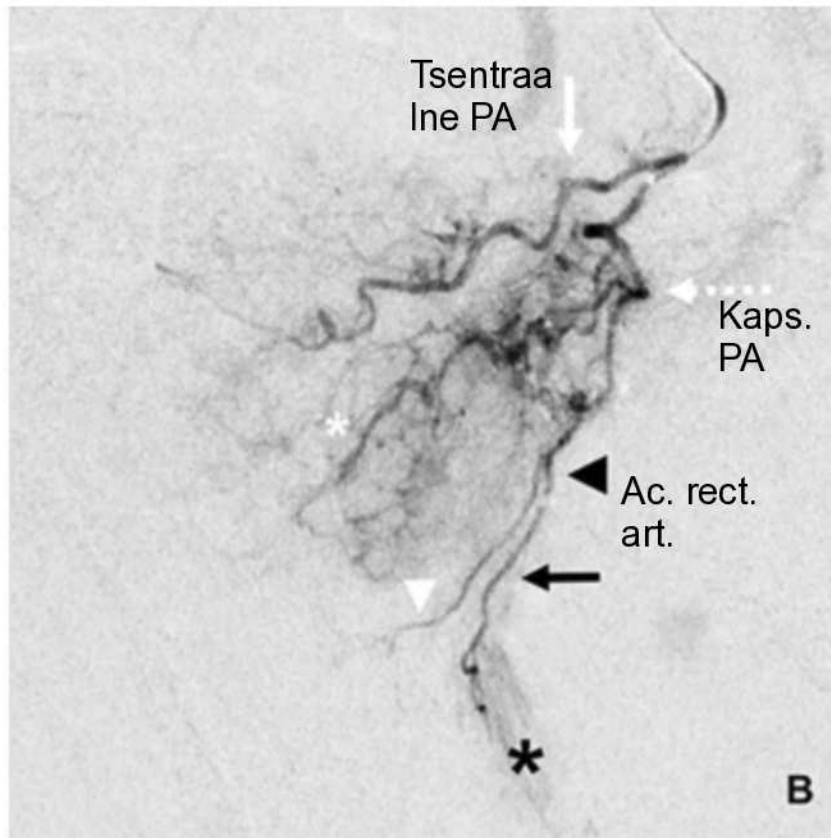
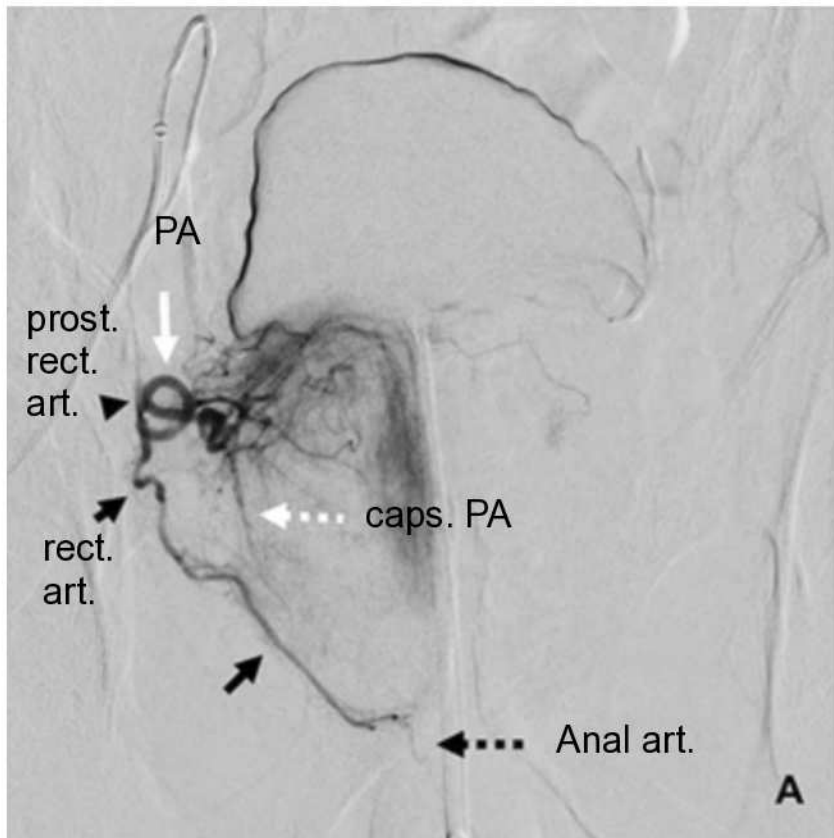
Pattern B

CardioVascular and Interventional Radiology volume 41, pages1664–1673 (2018)

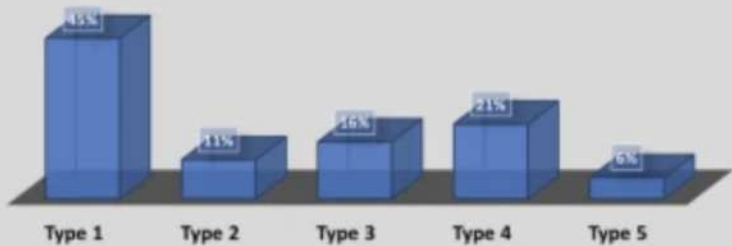


Pattern C

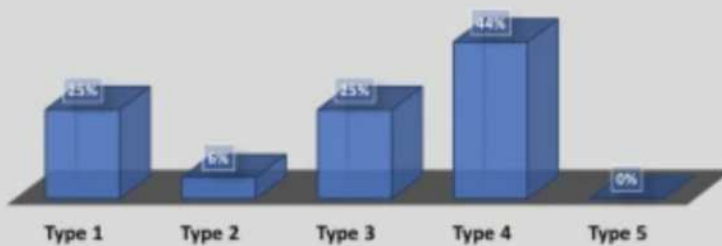
CardioVascular and Interventional Radiology volume 41, pages1664–1673 (2018)



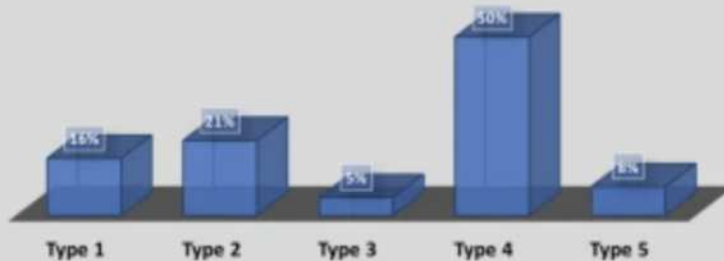
Pattern A



Pattern B



Pattern C



Kuidas teha?

TRA või TFA lokaalanesteesiaga

Protseduuri ajal AB profülaktika

IIA angiograafia: (5000 IUM hepariin, 200ug nitroglütseriin, +/- 2.5mg verapamiil)

IIA jaoks kasutatakse 5 Fr kateetreid, PA kateterisatsiooni korral kasutatakse 2 Fr kateetreid

ca 20% juhtudest kasutatakse “kaitsvat koili” - mittesihtmärgilise embolisatsiooni vältimiseks.






Post-embolisatsioonid sündroom

Variable	Mean Duration, Days					
	PV < 40	PV (40–50)	PV (50–80)	PV (80–100)	PV > 100	Overall PV
Mild fever	0	1.4 ± 3.1 (0–7)	0.1 ± 0.3 (0–1)	0.5 ± 1 (0–2)	0.5 ± 1.5 (0–5)	0.4 ± 1.4 (0–7)
Urethral burning	1 ± 1.4 (0–2)	4.2 ± 5.8 (0–11)	3.7 ± 3.8 (0–10)	3.8 ± 3.3 (0–10)	5.1 ± 4.1 (0–12)	4 ± 3.9 (0–12)
Pollakiuria	0	2 ± 3.9 (0–9)	3.8 ± 3.2 (0–10)	4 ± 2.3 (2–9)	6.2 ± 3.1 (3–12)	4.2 ± 3.4 (0–12)
Constipation	0	1 ± 1.4 (0–3)	0.8 ± 1.1 (0–3)	0.3 ± 2.8 (0–2)	1.2 ± 1.6 (0–3)	0.7 ± 1.2 (0–4)
Pelvic pain	1 ± 1.4 (0–2)	6.4 ± 6.3 (0–15)	2.8 ± 5.3 (0–20)	2.8 ± 3.2 (0–9)	2.6 ± 3.8 (0–12)	3.1 ± 4.5 (0–20)
Anal burning/pain	0	3 ± 6.7 (0–15)	2 ± 4.3 (0–15)	0.04 ± 0.8 (0–2)	1.2 ± 2.8 (0–10)	1.5 ± 3.7 (0–15)
Hematospermia	0	7 ± 12 (0–28)	12.4 ± 25.6 (0–90)	4 ± 6 (0–16)	0	6.5 ± 17.2 (0–90)

Variable	Study Cohort (<i>n</i> = 311)
Acute urinary retention	0
Foley catheter-related urinary tract infection	2 (0.6)
Urinary tract infection (catheter-free)	0
Hematuria	8 (2.6)
Rectorrhagia	2 (0.6)
Balanitis	2 (0.6)
Detachment of prostatic fragment	1 (0.3)
Worsening of erectile dysfunction	1 (0.3)
Transient ejaculate volume decrease	5 (1.7)
Anejaculation	0
Bladder ischemia	0
Rectal ischemia	0
Penile glans necrotic ulcer	0

Mis kasutada?

Long-Term Outcome of Prostatic Artery Embolization for Patients with Benign Prostatic Hyperplasia: Single-Centre Retrospective Study in 1072 Patients Over a 10-Year Period

Tiago Bilhim^{1,2,3}  · Nuno Vasco Costa^{1,2,3}  · Daniel Torres^{1,2,3}  ·
Luís Campos Pinheiro^{2,3}  · Erik Spaepen⁴ 

	PAE re-intervention	TURP re-intervention
1a	3.4%	2.3%
5a	21.1%	11.6%
10	58.1%	35%

Efficacy and safety of prostatic artery embolization for benign prostatic hyperplasia: a systematic review and meta-analysis of randomized controlled trials

[Peng Xiang](#), [Di Guan](#), [Zhen Du](#), [Yongxiu Hao](#), [Wei Yan](#), [Yonghui Wang](#), [Yutong Liu](#), [Dan Liu](#) & [Hao Ping](#)

PAE ja TURP võrdselt vähendavad subjektiivseid kaebusi

PAE-l vähem komplikatsioone ja lühem hospitaliseerimise aeg

European Association of Urology

Summary of evidence	LE
Prostatic artery embolisation is less effective than TURP at improving symptoms and urodynamic parameters such as flow rate.	1a
Procedural time is longer for PAE compared to TURP, but blood loss, catheterisation and hospitalisation time are in favour of PAE.	1b

Recommendations	Strength rating
Offer prostatic artery embolisation (PAE)* to men with moderate-to-severe LUTS who wish to consider minimally invasive treatment options and accept less optimal outcomes compared with transurethral resection of the prostate.	Weak
Perform PAE only in units where the work up and follow-up is performed by urologists working collaboratively with trained interventional radiologists for the identification of PAE suitable patients.	Strong

Viited

- Atlas of Vascular Anatomy: An Angiographic Approach Second Edition by Renan Uflacker MD
- Prostate Arterial Anatomy: A Primer for Interventional Radiologists, Techniques in Vascular and Interventional Radiology, Volume 23, Issue 3,2020, 100689,SSN 1089-2516
- Outcome of Prostatic Artery Embolization for Patients with Benign Prostatic Hyperplasia: Single-Centre Retrospective Study in 1072 Patients Over a 10-Year Period. Cardiovasc Intervent Radiol. 2022 Sep;45(9):1324-1336. doi: 10.1007/s00270-022-03199-8. Epub 2022 Jul 1. PMID: 35778579.
- Prostatic Artery Embolization Versus Transurethral Resection of the Prostate: A Post Hoc Cost Analysis of a Randomized Controlled Clinical Trial Cardiovasc Intervent Radiol (2021) 44:1771–1777