

Benign Prostatic Hyperplasia Supported by *syngo* DynaCT

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Patient History

A 66-year-old male with benign prostatic hyperplasia (BPH). Received drug treatment (alpha blockers and 5 alpha reductase inhibitors) for one year. Symptoms worsened gradually to the point where the patient needed invasive treatment due to a major dysuria. Patient rejected transurethral resection of the prostate (TURP) because he was afraid of potential side effects such as urinary incontinence or impact on sexual life. Patient was referred to interventional radiology for prostatic artery embolization after multidisciplinary discussion.

Diagnosis

Prostate volume: 60g, Prostate-specific Antigen (PSA): 0.85, International Prostate Symptom Score (IPSS): 13; Quality of Life (QoL): 4; Flow Max 5ml/s

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Treatment

Bilateral prostatic artery embolization using 300–500 µm Embospheres® (Merit Medical). Homogeneous solution of 2 cc spheres combined with 10 cc contrast agent and 10 cc saline. Fathom™ .014" steerable microwire (Boston Scientific) and 2 Fr Progreat® Microcatheter (Terumo).

Assessment of prostate in pre-interventional MRI for identification of central gland and transitional/peripheral zone before intervention.

Foley catheter filled with contrast medium and saline placed and used as basic landmark in 2D imaging.

syngo DynaCT imaging when catheter in left/right iliac artery for assessment of 3D vessel tree and identification of prostatic arteries using access path planning software *syngo* Embolization Guidance (Fig. 1A, 1B).

syngo DynaCT with reduced dose (5s *syngo* DynaCT Body CARE protocol, 248 projections) with hand injection of diluted contrast agent via catheter in right prostatic artery to exclude non-target embolization (Fig. 3A, 3B). This CBCT was acquired with the angiography system on the left side of the table to reach pelvic area also in taller patients.

Successful superselective embolization with very slow injection into right and left prostatic artery until stasis was reached.

Comments

The procedure requires a thorough understanding of the vascular anatomy and use of CBCT technology to exclude non-target embolization. It was possible to show that a 5s *syngo* DynaCT Body CARE run provides sufficient image quality to confirm safe catheter position, while saving about 37% dose compared with a regular 6s *syngo* DynaCT Body.

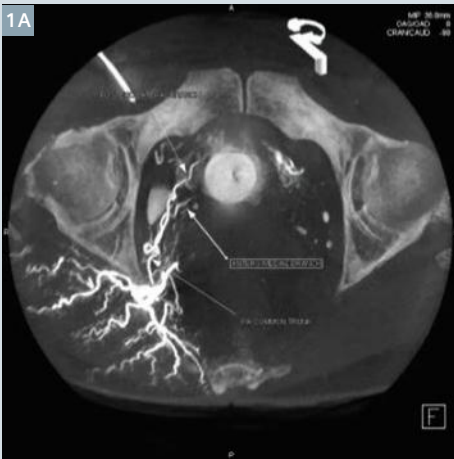
Injection of diluted contrast is mandatory to obtain optimal *syngo* DynaCT imaging.

With cranial/caudal collimation during *syngo* DynaCT acquisitions, dose can be reduced while image quality improves even further due to less scatter radiation.

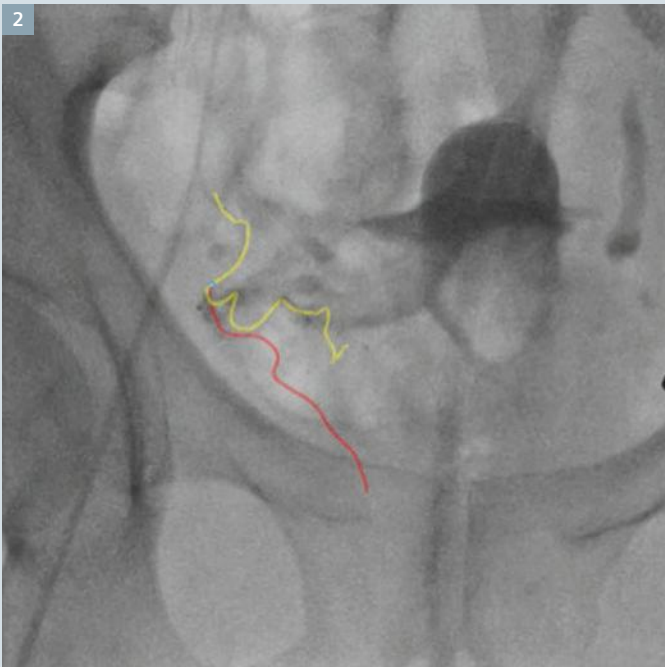
syngo Embolization Guidance for faster navigation to the target vessel saves contrast media, shortens fluoroscopy time, and enables dose reduction (Fig. 2).

Contact

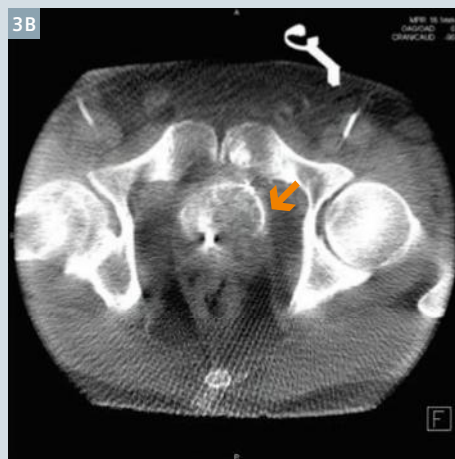
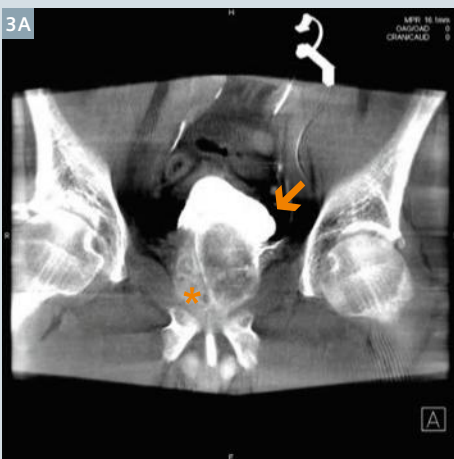
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1 Axial and coronal views can help to identify the prostate artery feeders. Here, an antero-medial and postero-medial branch are visible.



2 Store fluoro showing overlay of syngo Embolization Guidance centerlines (yellow line represents the anterosuperior branch to the right prostatic artery).



3 A syngo DynaCT (5s syngo DynaCT Body CARE protocol, 248 projections) is performed before starting the embolization. It confirms the safe catheter position into the prostate artery away from non-target arteries (rectal/vesical branches). Coronal and axial view with arterial contrast media injection show a right lobe contrast staining (*), without vesical or rectal wall enhancement. Arrows point to contrast agent in the bladder.