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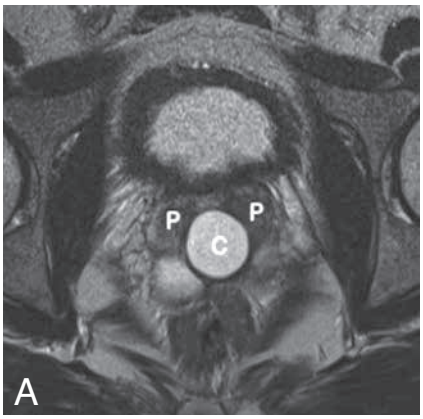
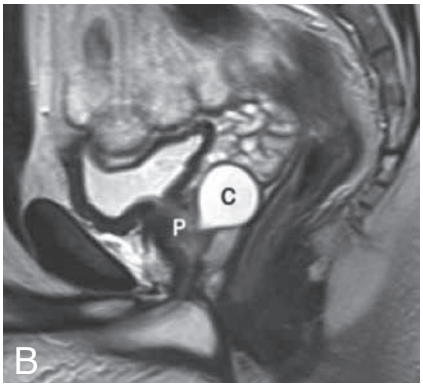
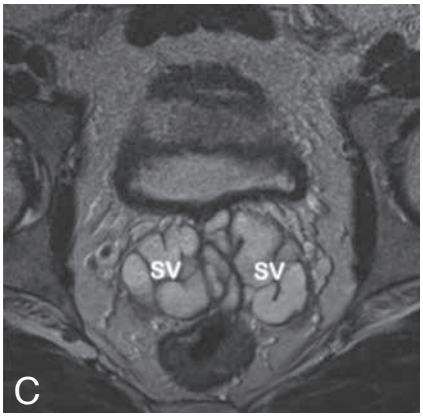
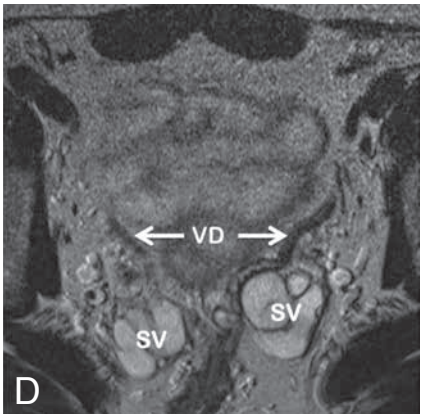
IMAGES IN CLINICAL RADIOLOGY









Secondary infertility caused by a midline cyst of the prostate

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A 27-year-old male was referred to the urologist for evaluation of secondary infertility. Semen analysis by the referring physician showed a severe oligoasthenoteratozoospermia (OAT). The patient had no urinary symptoms or sexual complaints and the past medical history was unremarkable. Physical examination revealed thickened spermatic cords, suggesting a possible obstruction of the vasa deferens. A small varicocele was noticed on both sides. External genitalia and secondary sexual characteristics were otherwise normal. Hormonal laboratory findings were unremarkable. An MRI was performed to detect a possible obstructive cause of infertility. T2 weighted images (T2-WI) showed a sharply delineated, homogenous hyperintense cystic structure (c) of 2.5 × 2 cm dorsally at the midline in the prostate (P) (Fig. A). This cyst reached beyond the cranial and dorsal edge of the prostate (Fig. B). Furthermore, significantly swollen seminal vesicles (SV) and vasa deferens (VD) were noted (Fig. C, D). These findings suggested an obstruction of the ejaculatory ducts caused by the prostatic cyst, resulting in distension of the vasa deferens and seminal vesicles. This was considered the probable cause of secondary infertility in this patient. Subsequently, a transurethral unroofing of the cyst was proposed as an attempt to restore fertility. However, this treatment was refused by the patient.

Comment

Midline cysts are a common (incidental) finding in the prostate and they may be utricle cysts or müllerian duct cysts. Both are congenital cysts that are remnants of the müllerian duct system. During normal embryogenesis the müllerian ducts form the fallopian tubes, uterus, cervix and upper vagina in the female. In the male embryo the müllerian ducts regress early in embryogenesis under the influence of müllerian regression factor (MRF). Normally, the müllerian system remains rudimentary in males with the appendix testis and prostatic utricle persisting as the only müllerian remnants. Large müllerian duct remnants can cause obstruction of the bladder neck or the seminal vesicles and ejaculatory ducts and therefore they can cause obstructive azoospermia. Müllerian duct cysts are more likely to cause ejaculatory duct obstruction than utricle cysts. Müllerian duct cysts and utricle cysts are separate entities. The müllerian duct cyst is derived from the müllerian duct, whereas the utricle cyst derives from a cystic dilatation of the prostatic utricle. On imaging studies, these two entities can be identical and indistinguishable from one other. However, there are some clinical and morphologic differences that can be used to distinguish them. Müllerian duct cysts are usually discovered in infertile man in the 3rd and 4th decade of life. They are very rarely associated with renal agenesis, but external genitalia are normal. Müllerian duct cysts do not communicate with the prostatic urethra. They extend above the prostate if large. Müllerian duct cysts may cause obstructive azoospermia or severe oligospermia, wich may be progressive in adulthood and preceded by previous fertility. Utricle cysts manifest in the first 2 decades of life and are often associated with hypospadia, intersex disorders, cryptorchidism and ipsilateral renal agenesis. Unlike müllerian duct cysts, utricle cysts do not extend beyond the prostate gland. They are always in the midline and communicate freely with the prostatic urethra. In contrast, müllerian duct cysts can theoretically extend slightly lateral to the midline, since the cephalic portion of the müllerian duct develops lateral to the midline.

If we consider the various features discussed above, we can assume that in the presented case we are probably dealing with a müllerian duct cyst.

Congenital midline prostatic cysts are easily identified on MR images by their high signal on T2-WI. In müllerian duct cysts, stones are common and virtually diagnostic if found to lie in a retrovesical cavity that is not connected to the bladder. Calculi may cause hemorrhage in a cyst, which can be demonstrated on T1-WI.

Congenital midline prostatic cysts should only be treated in symptomatic or infertile patients, and in the latter only when signs of ejaculatory duct obstruction are present. Endoscopic unroofing of the cyst is now the procedure of choice for patients who want to preserve their fertility.

Reference

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