

Case report**Primary Vaginal Stone Associated with Bladder Exstrophy**

Naomi Winn, Specialist Registrar in Radiology

Richard Henderson, Consultant Radiologist

Darlington Memorial Hospital

DL3 6HX

Correspondence to naomi_winn@yahoo.com

Vaginal stones are a rare cause of pelvic pain and associated symptoms. We present here a case of a primary vaginal stone in a patient who underwent repair of bladder exstrophy in infancy.

Introduction

Our patient is an 11 yr old child who underwent bladder exstrophy repair at six weeks of age involving primary closure of the bladder and anterior abdominal wall. Since then she has had recurrent urinary symptoms, including persistent dribbling incontinence. Urine culture has never been conclusive and she was managed with antibiotics both for prophylaxis and treatment. She presented to her GP with sharp supra-pubic pain, severe enough to necessitate absence from school on several days. An abdominal radiograph taken at this time showed a large pelvic radio-opacity, presumed to be a bladder calculus (figure 1).

Clinical Details

Figure 1:

Abdominal radiograph showing the large pelvic radio-opacity. The contours follow the vaginal vault and would be very unusual for a bladder calculus. Also of note is widening of the pubic symphysis, commonly associated with bladder exstrophy.

Subsequent ultrasound of the urinary tract revealed an empty bladder. Examination under anaesthesia demonstrated a small vaginal introitus, but no apparent stone. The bladder capacity was reduced, at 20ml, with a short urethra. The radio-opacity was thought to be within the bladder but cystoscopy showed an empty bladder with smooth mucosa. A stone however could be felt within the vaginal vault and was removed by opening the sidewall of the vagina, from within the pelvis (figure 2).



Figure 2:
Clinical image of the stone.

Primary closure of the vagina, bladder and anterior abdominal wall was achieved. The ureters were re-implanted with short tunnels and the bladder outlet and urethra reconstructed. The vaginal orifice was moved more posteriorly with the aid of a V-flap, to reduce the future risk of urinary reflux.

Discussion

The origin of this primary vaginal stone is presumed to be from a vesico-vaginal fistula following surgical repair of the bladder in infancy. One similar case associated with bladder exstrophy has been previously reported in a 14yr old girl¹. Primary vaginal stones are thought to be formed through deposition of urinary salts in the vagina. They have been described in association with chronic vesico-vaginal fistulae, urethro-vaginal fistulae and an ectopic vaginal ureter². A case has also been described in an 11yr old girl with severe learning disabilities who was incontinent of urine and nursed predominantly in the recumbent position³. The postulated origin of this vaginal calculus is from chronic vaginal contamination with urine owing to the urinary incontinence.

Secondary vaginal stones are relatively more common and form when there is foreign material in the vagina, usually a retained swab following medical intervention⁴. The female genital tract can also

show calcification in the uterus⁵ and calcification associated with the ovaries, often in malignancy, for example teratoma.

Conclusion

Vaginal stones are a rare cause of supra-pubic pain, but should be considered in symptomatic patients who have a history of pelvic surgery, urogenital abnormalities or chronic urinary incontinence. Large or multiple pelvic radio-opacities are usually contained within the bladder, but an unusual appearance should raise the possibility of extra-vesical pathology. Ultrasound is a simple, radiation free and inexpensive imaging modality to determine the anatomical location of any opacities detected on plain radiographs, although in this case the stone was not seen.

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