Suture urolithiasis is an unusual but recognised phenomenon seen following open urological surgery and procedures closely related to the urinary tract. It most commonly occurs with the use of non-absorbable sutures [1]. While it has been reported as occurring within the bladder and renal pelvis [2, 3], we report an unusual case where suture calculi have formed within a pseudo-diverticulum following emergency ureteric surgery.

Introduction

Suture urolithiasis is an unusual but recognised phenomenon seen following open urological surgery and procedures closely related to the urinary tract. It most commonly occurs with the use of non-absorbable sutures [1]. While it has been reported as occurring within the bladder and renal pelvis [2, 3], we report an unusual case where suture calculi have formed within a pseudo-diverticulum following emergency ureteric surgery.
Ureteric Suture Lithiasis Following Open Ureteric Repair

ureroscopy discovered no evidence of stones. Repeat MAG3 renogram demonstrated good drainage and equal function. The patient did not attend further appointments and so was discharged.

Discussion

Suture lithiasis has been reported more commonly in the urinary tract, both in animal subjects and case reports [1]. The most frequently reported urological location is the bladder following procedures such as diverticulec-

Fig. 1. Control film for intravenous urogram demonstrating two small foci of calcification to the left of the inferior border of the L3 vertebra.

Fig. 2. Post-contrast film for intravenous urogram demonstrating calyceal dilatation and clubbing in the left collecting system, draining into a dilated left upper ureter to the level of L3; there is a narrower segment of ureter at the L3 to L4 level with two small radio-opacities by the side of the ureteric contrast, suggesting a peri-ureteric location.

Fig. 3. The two calculi extracted from the left ureter, each formed around a non-absorbable suture.

tomy and colposuspension [4, 5]. Extra-vesical operations have been involved, for example extrophy repair for pubic bone closure [6]. The most commonly implicated material is non-absorbable suture, likely due to prolonged contact time with urine thus acting as a nucleus around which crystallisation, calcification and eventually calculus formation. However there has been one case where a bladder stone had formed around absorbable suture after a radical prostatectomy [3].

There are very few reports within the medical literature of suture urolithiasis occurring within the upper urinary tract, specifically the renal pelvis; one occurred following urological surgery in the form of pyeloplasty and the other after subtotal colectomy [7, 8]. Suture material eroding through the wall of injured adjacent viscera to form stones has been described before, for example following hysterectomy to form a bladder stone [9]. There have however been no reports of suture calculi presenting for the first time having formed within the ureter. We therefore believe this to be the first case where suture formation...
urolithiasis has occurred specifically following open ureteric surgery, with the added uniqueness of such calculi having formed within a ureteric pseudo-diverticulum which itself had become established in relation to the same procedure.

This particular case raises other issues. Looking specifically at ureteric gunshot injury, most centres that have reported on their experience of managing this advocate the use of absorbable sutures for ureteric reconstruction [10]. This material however may not have been available at the time of our patient’s surgery given his geographical location. In addition, given the relative ease today of international travel and migration it could be expected that such cases may be seen more frequently in the Western world. However, as outlined above suture urolithiasis has been demonstrated in patients living in developed nations and so an awareness of previous urological surgery should be applied to all patients regardless of country.

**Conclusion**

Suture urolithiasis can occur anywhere within the urinary tract following urological surgery, and procedures in close relation to the urinary tract, and most commonly where non-absorbable suture material has been used. Awareness of previous surgery and the types of material used are important when assessing such patients who present with subsequent stone disease within the urological tract.

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