

## CASE REPORT

### Retained Surgical Instruments in The Pelvis Complicated by Colo-vesical Fistula

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#### ABSTRACT

Retaining a surgical instrument in the patient unintentionally could lead to serious complications and in extreme cases, death. It also damages the reputation of the healthcare provider, as well as the health facility involved. We report a case of retained haemostat and dissecting forceps complicated by colo-vesical fistula 10 years after hysterectomy in a 50-year-old lady with a 7-month history of passage of urine per rectum. The foreign bodies were removed as well as an associated bladder calculus. The fistulae were repaired and recovery was uneventful.

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#### INTRODUCTION

Retaining a surgical instrument in the patient unintentionally is a medical error with serious sequelae on the patient and the surgeon. Such surgical instruments are called retained surgical items(RSIs).<sup>1</sup> These

are objects typically used in surgery and inadvertently left in the patient after the completion of the procedure.<sup>2,3</sup> Although the true incidence is unknown due to under-reporting and under-investigation, an

estimated incidence rate of 1:5,500 operations has been documented.<sup>4</sup>

These RSIs cause morbidity, increased length of hospital stay and in extreme cases death of the patient. Retention of these items tends to defame the healthcare provider as well as the health facility involved.<sup>5</sup> Medical negligence involving RSIs is proven easily due to the doctrine of *res ipsa loquitur* ('the thing itself speaks').<sup>6</sup> In essence, the fact that a surgical item has been retained is, in and of itself, proof that malpractice has occurred.<sup>7</sup> The economic implications of these 'left-behinds' could be far-reaching.

Approximately \$473,000 has been recorded as the average indemnity pay-out in the United States over a 4-year period for a claim involving RSI for hospitals and physicians.<sup>7</sup> This is outside the costs of surgeries and hospitalizations associated with these cases of RSI. We report a case of symptomatic retained surgical forceps 10 years after a hysterectomy.

#### CASE REPORT

OSN is a 50-year-old nulliparous airline ticketing agent (airline staff) who presented with a 7-month history of passage of urine per rectum. This was insidious in onset, consisting of stool mixed with urine. She occasionally passed small volumes of urine per urethram. Passage of urine per rectum was always preceded by urge to void. She was continent to faeces. There was associated dull lower abdominal pain, which was not severe, non-radiating, worsened by urge to urinate and temporarily relieved by passage of urine per rectum. She also had episodic dysuria with no other lower urinary tract symptoms. There was no history of chronic cough, contact with any adult with chronic cough or drenching night sweats.

About 10 years prior to the onset of the above complaints, she had hysterectomy for multiple uterine fibroids in a private hospital. Surgery was done by a general practitioner, was eventful, lasted for more than three hours and she received 6 units of blood intra-operatively. Immediate post-operative period was uneventful. Since after the surgery she had been having recurrent lower abdominal pain with a history of difficulty gaining access into banks as the security metal detectors usually deny her entry.

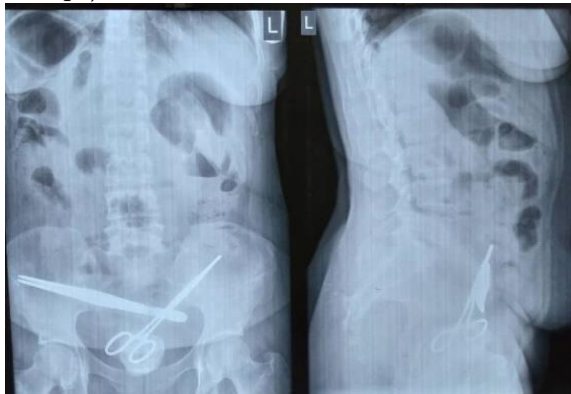
At presentation, she was anorexic, weak, had lost significant weight and had low grade fever. On examination, she was chronically ill-looking and pale. Abdominal examination revealed an extended lower midline incision scar with tenderness over both iliac fossae and suprapubic regions. Vaginal examination revealed a hard, tender mass bulging into the anterior wall of a blind-ending vagina. Digital rectal examination revealed an ill-defined, tender, hard mass protruding into the anterior aspect of the proximal rectal wall.

She was catheterized (continuous bladder drainage) with immediate and subsequent drainage of small volumes of foul-smelling, cloudy, faeculent urine.

Investigation results revealed haemoglobin of 6.3g/dL, serum electrolytes, urea and creatinine (sodium=149mmol/L, potassium=3.2mmol/L, other parameters were normal). Urine culture yielded heavy growth of *Escherichia coli* sensitive to only Augmentin++ and Imipenem++ among the tested antibiotics. Abdomino-pelvic ultrasound scan showed normal abdominal organs and poor filling of the bladder with consequent poor assessment of the pelvic organs. Plain abdominal radiographs and

Computed Tomography Urography revealed a retained dissecting forceps and a haemostat impinging on the pelvic bones with a large bladder calculus as shown in Figures 1 and 2.

**Figure 1.** Plain abdominal radiograph showing the instruments (haemostat and dissecting forceps)



**Figure 2.** CT Urography showing the instruments (haemostat and dissecting forceps)



She was resuscitated with intravenous fluids, antibiotics and blood transfusions. She underwent exploratory laparotomy as a joint procedure by the Urologists and the General Surgeons with intra-operative findings of a dissecting forceps trapped by inspissated faecal matter inside the sigmoid colon and a haemostat partially trapped by a huge bladder calculus in the bladder (Figures 3). There was a short fistulous tract between the sigmoid colon and the dome of the bladder. A segment of mid-transverse colon was noticed to have been sutured to the caecum.

She had removal of the foreign bodies with the attached calculus and inspissated faecal matter, repair of fistulous connection between the sigmoid and the bladder, disconnection of the transverse colon from the caecum with bowel repairs, and protective transverse de-functioning colostomy (Figure 4).

She was subsequently catheterised and maintained on continuous drainage for 6 weeks, while colostomy reversal was done at 8 weeks. She was discharged home, and has been seen twice in clinic. All efforts to reach the general practitioner that did the hysterectomy proved abortive as he had since relocated to an unknown destination.

**Figure 3.** The instruments (haemostat and dissecting forceps) and huge bladder calculus removed from the patient



**Figure 4.** Immediate post-operation



#### DISCUSSION

Surgical items are used in saving lives but could cause serious morbidities and

possibly, mortalities if associated with mistakes. Despite measures put in place to ensure the safety of operative interventions, surgical items are still forgotten in patients as those precautionary measures are still prone to human error. These mishaps are life-threatening.

Different surgical items have been reportedly left in different locations in the body following operative procedures. These items range from surgical instruments to piece(s) of gauze and broken piece(s) of surgical items like needle. About 88% of RSI cases occur in an instance where the sponge and instrument counts were declared "correct".<sup>8</sup> Surgical sponges are the most commonly retained surgical items.<sup>4,8,9,10</sup> These are called gossypibomas and they account for up to 69% of cases.<sup>4,8</sup> Other instruments include clamps, retractors, electrodes and needles.<sup>4,8</sup> A haemostat and a dissecting forceps were retained in the index case. The abdomen and pelvis have been noted to be the most common sites in the body where surgical items are forgotten just like in the index case.<sup>8,9,11</sup>

Several factors have been shown to increase the risk of RSI. Emergency operations, complicated operations, high body mass index, unplanned change in procedure, and failure to perform a count of the sponges and instruments rank high among the known predisposing factors.<sup>8,12</sup> Lincourt *et al.* in a retrospective review of data relating to RSIs noted that multiple surgical teams, number of major procedures performed at the same time, as well as incorrect instrument counts recorded, were among the risk factors for RSI.<sup>9</sup> Communication failure between members of the operation team was documented as the major risk factor for retaining a surgical item by Cima *et al.*

following their retrospective review of the reported cases of RSI.<sup>4</sup>

Depending on the nature of the item and the duration it was left in-situ, different clinical manifestations could arise. The retained item could be asymptomatic, and only found incidentally.<sup>13</sup> In symptomatic cases, clinical presentations range from non-specific features to mass effect, intestinal obstruction, fistulisation, sepsis/abscess, chronic wound and discharging sinuses.<sup>6</sup>

Some retained items could be discovered early in the post-operative period either by a discordant count of instruments and sponges, suggestive post-operative features or by an investigation. The duration of retention ranges from the time in the operating room (post-closure) to years. Steelman *et al.* in a review of the database of voluntarily reported cases of RSI observed that less than 20% of cases were discovered while the patient was still in the operating room while about 50% of cases were discovered after discharge from the hospital with most of them getting noticed after 30 days of discharge.<sup>11</sup> The duration of symptoms usually corresponds with the duration the foreign item has been in-situ and could range from hours to years.

Our patient presented with a 7-month history of clinical features which must have been preceded by some non-specific symptoms given that the abdominal surgery was about 10 years earlier. Similar to the index case, Susmallian *et al.* reported a case of forgotten surgical sponge for 9 years following a caesarean section in which the patient only had symptoms for about a month before presentation.<sup>12</sup> In most cases of delayed presentations, patients come with features of complications from the retained object as is the case with the index patient.

Retained objects are most often detected by radiologic investigations.<sup>8,14</sup> The index case was detected by a plain abdominal radiograph and computed tomography urography.

Management of RSI after identification varies according to the nature of the item, its location, and patient's condition.<sup>4</sup> Most times removal of the foreign item requires another operation, like in the index case, while in some cases surgery may not be needed. Yet in certain other cases the RSI is better left in place as attempting to remove it poses greater risk than leaving it behind.

In the index case, the possibility is that these surgical instruments were, inadvertently, left inside the pelvis and subsequent pressure effect on the surrounding viscera led to their migration into the lumen of these organs with subsequent fistula formation. Bostan *et al.* reported a case of retained forceps that migrated from the intra-abdominal cavity into the transverse colon within 3 years following a laparotomy.<sup>14</sup> Early identification of these retained instruments could have prevented these complications.

As efforts are continually being put in place to reduce the incidence of RSIs, newer measures are increasingly being adopted especially in developed climes. These measures stem from the fact that the standard sponge and instrument count has much potential for human error. Some of these newer measures include routine intra-operative radiographic screening, bar-coding of instruments, and radiofrequency detection system.<sup>2,11,13</sup> The standard counting and re-counting of surgical instruments is still invaluable, especially in developing nations that may lack the newer preventive measures. Perhaps excellent communication between the surgeons and other members of

the operating room is the cornerstone of preventing RSIs.<sup>10,13</sup>

In conclusion, retention of surgical items could lead to severe complications and, as such, efforts should be made by all the members of the operating team to mitigate it. When it does occur, early identification and timely removal go a long way to prevent complications, mortality and ensure good outcome.

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