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Case Report / Приказ болесника

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Migrated bullet in the bladder presenting 30 years after a gunshot wound to the gluteal region

Мигрирани метак у бешици 30 година након прострелне ране у глутеални регион

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SUMMARY

Introduction In current practice, genitourinary trauma secondary to gunshot wounds are relatively rare. Even less common is the migration of a bullet decades after the trauma with a few cases described in the literature.

This article illustrates the sporadic occurrence of bullet migration into the urinary system. It underscores the importance of prompt diagnosis and timely treatment as the time period from the trauma occurrence until trauma onset can be extremely long.

Case outline We present a case of a retained bullet that migrated into the bladder 30 years after the injury in the gluteal region. This is the longest period from the occurrence of the gunshot wound to the onset of symptoms described in the literature. After failed attempts at retrieving the bullet endoscopically, a small cystostomy was performed with successful evacuation of the foreign body.

Conclusion The time gap from the occurrence of the trauma to the appearance of symptoms can complicate the diagnostic and treatment process. The history of gunshot wound in this region suggests exclusion of bullet or shrapnel migration into the bladder, regardless of the time distance since the trauma. Although migration is rare, it raises the attention of both short-term and long-term follow-up of patients with retained bullets and shrapnel.

Keywords: foreign-body migration, complications; urogenital system, injuries; urogenital system, surgery

САЖЕТАК

Увод У досадашњој пракси, генитоуринарне трауме настале након прострелних рана су релативно ретке. Још мање уобичајена је миграција метка деценијама након трауме са неколико случајева описаних у литератури.

Овај чланак илуструје спорадичну појаву миграције метака у уринарни систем. Подвлачи важност брзе дијагнозе и благовременог лечења јер временски период од настанка трауме до појаве трауме може бити изузетно дуг.

Приказ болесника Представљамо случај задржаног метка који је мигрирао у бешику 30 година након повреде у глутеалној регији. Ово су најдужи период од настанка прострелне ране до појаве симптома описаних у литератури. Након неуспелих покушаја ендоскопског извлачења метка, начињена је мала цистостома уз успешно уклањање страног тела.

Закључак Временски размак од настанка трауме до појаве симптома може да закомпликује процес дијагностике и лечења. Историја прострелних рана у овом региону сугерише искључење миграције метака или гелера у бешику, без обзира на временску дистанцу од трауме. Иако је миграција ретка, она привлачи пажњу и краткорочног и дугорочног праћења болесника са задржаним мецима и гелерима.

Кључне речи: миграција страног тела, компликације; урогенитални систем, повреде; урогенитални систем, хирургија

INTRODUCTION

Foreign body entry into the urinary tract is most often due to the insertion of objects into the urethra by the patient or an intimate partner, and less often to ballistic trauma with direct involvement of the urinary tract. Gunshot injuries to the genitourinary system are rare in daily practice in developed countries. The genitourinary system is affected in about 10.5% of gunshot wounds [1]. The bladder is the second most commonly affected part after the kidney [2]. When considering injuries to the lower urinary tract, bladder involvement accounts for 37.93% of them [3]. Much less commonly, a foreign body can migrate into the bladder from the perivesical tissues after trauma or surgery. Given the scarcity of cases in the literature attention should be paid to the possibility of late migration of a foreign body into the urinary system as it may complicate and delay the diagnostic process and treatment.

CASE REPORT

A 63-year-old man presented to the urology office with an acute onset of dysuria, pollakiuria, difficult urination with cessation of the urinary stream like a valve mechanism, pain in the suprapubic area. The complaints started suddenly a few weeks before the visit. The patient also reported a feeling of not emptying the bladder and several episodes of blood in the urine after physical exertion. He denied urinary stone history. The antibiotic therapy prescribed by a personal physician had no effect, after which he was referred to a urologist. After a thorough history of previous illnesses and hospitalizations he reported a gunshot wound in the gluteal region 30 years ago - during treatment of the wound, part of the bullet had been evacuated, but fragment had been left in the wound channel. The wound healed without complications.

An ultrasound examination was performed, which established a hyperechoic shadow into the bladder with a diameter of about 20 mm (Figure 1).

An X-ray of the KUB (kidney, ureter and bladder) was performed showing metal density shadow with a diameter of about 16 mm (Figure 2).

From the performed CT (computed tomography) scan of the abdomen and pelvis there was evidence of a foreign body with a metallic density suspicious for part of a bullet with a diameter of about 14 mm, with intact bladder wall, without evidence of extravasation of contrast material. Kidneys – without hydronephrosis (Figures 3 and 4).

A cystoscopy was performed, which confirmed the suspicion of a migrated free floating fragment of a bullet into the bladder (Figures 5 and 6).

After careful examination - no defect or fistula was found on the bladder wall. An attempt was made to remove the foreign body endoscopically, but it did not pass through the bladder neck (Figures 7 and 8).

The possibility of retrograde ejaculation after the bladder neck incision and the risk of urethral injury given the size of the foreign body were explained to the patient. An informed decision was made to perform cystotomy with foreign body extraction. A suprapubic incision with small cystotomy was performed and part of a bullet with size of 14/10mm was removed (Figures 9 and 10).

Under direct inspection the bladder wall was found intact. The bladder was closed in two layers and catheter was placed for 5 days. The postoperative period went without complication as the patient was discharged 5 days after the surgery with complete resolution of complaints. He was

followed up for a period of 6 months – without any complaints from the genitourinary system. The post-operative ultrasound found no abnormalities.

Ethics: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

DISCUSSION

We present one of the few cases in the literature of a bullet migrating into the bladder tens of years after the gunshot wound. To our knowledge, this is the longest period from injury to bullet migration and onset of complaints reported in the literature. The sudden onset of complaints and the gunshot wound scar in the gluteal region points to projectile migrating 30 years after the trauma. Another fact confirming the recent migration of the bullet is the absence of incrustations on the metal surface. In similar cases in the literature, at the onset of the complaints around the bullet or the shrapnel fragment incrustations have already formed leading to laser lithotripsy of the encrusted shell at the first stage [4].

Primary bullet penetration into the bladder following a gunshot wound often present with haematuria [5]. The possibility of involvement of other parts of the genitourinary tract due to their proximity should not be forgotten. Injury to them can occur both during trauma and during migration of the foreign body [6]. Bullet migration into the bladder shortly after extraperitoneal trauma have been described with no contrast extravasation identified on imaging studies neither during the extravesical placement of the bullet nor after migration into the bladder several days later [7].

The migration of a bullet in the urinary tract is most often manifested clinically with dysuric symptoms and hematuria. A review of the literature shows that it can also occur with the onset of acute urinary retention after causing obstruction by entering the urethra [8]. The migration of the foreign body into the ureter can also manifest as renal colic [9].

The variety of complaints and the different size of the migrated foreign body determine the subsequent behavior, which can be both conservative and invasive. Conservative behaviour is appropriate in cases where the size and location of the bullet allow its spontaneous elimination. In consideration should be included the use of alpha-blockers and nonsteroidal anti-inflammatory drugs. When, despite the conservative measures, the foreign body cannot be eliminated, a more invasive approach should be undertaken. Depending on the location and size, it varies

from endoscopic extraction of the foreign body [5]. to surgical removal of the foreign body by cystotomy – which was the behavior in our case.

In conclusion, a small number of cases of bullet migration into the bladder have been described. After consulting the literature, the 30-year period from the occurrence of the gunshot injury to the onset of symptoms presented by us is the longest described so far. The time gap from the occurrence of the trauma to the appearance of symptoms can complicate the diagnostic and treatment process. When there are sudden onset of dysuric complaints, hematuria, and a history of a gunshot wound in this area, the migration of a bullet or shrapnel into the bladder should be ruled out, regardless of the time distance since the trauma. Removal of the bullet in such cases should be considered because of the irritative complaints and the possible complications that may occur. Methods of choice that have proven their effectiveness and safety are endoscopic removal and cystotomy.

Conflict of interest: None declared.

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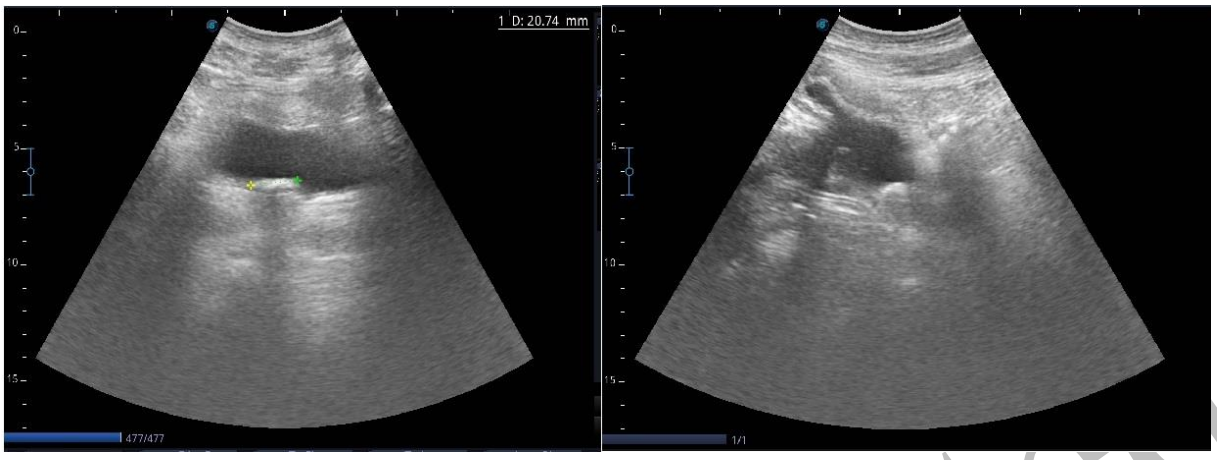

Figure 1. Ultrasound image of the bladder with hyperechoic structure inside

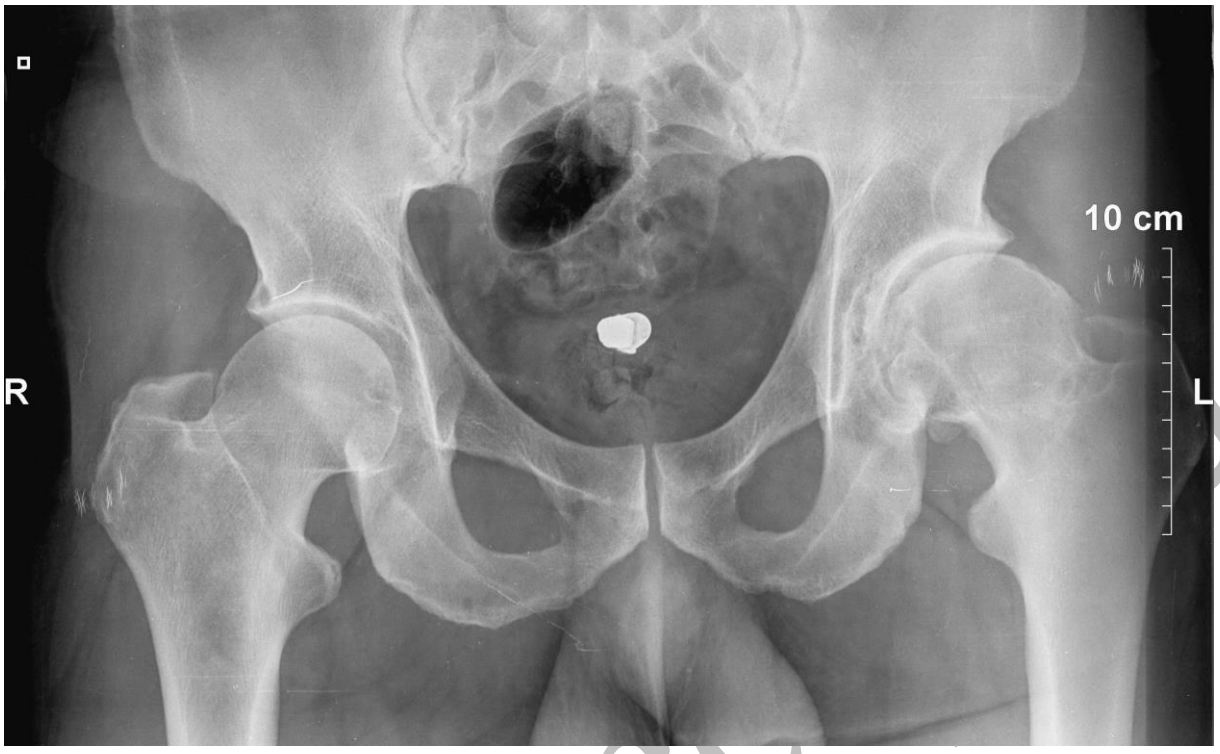

Figure 2. X-ray of the pelvis showing the foreign body

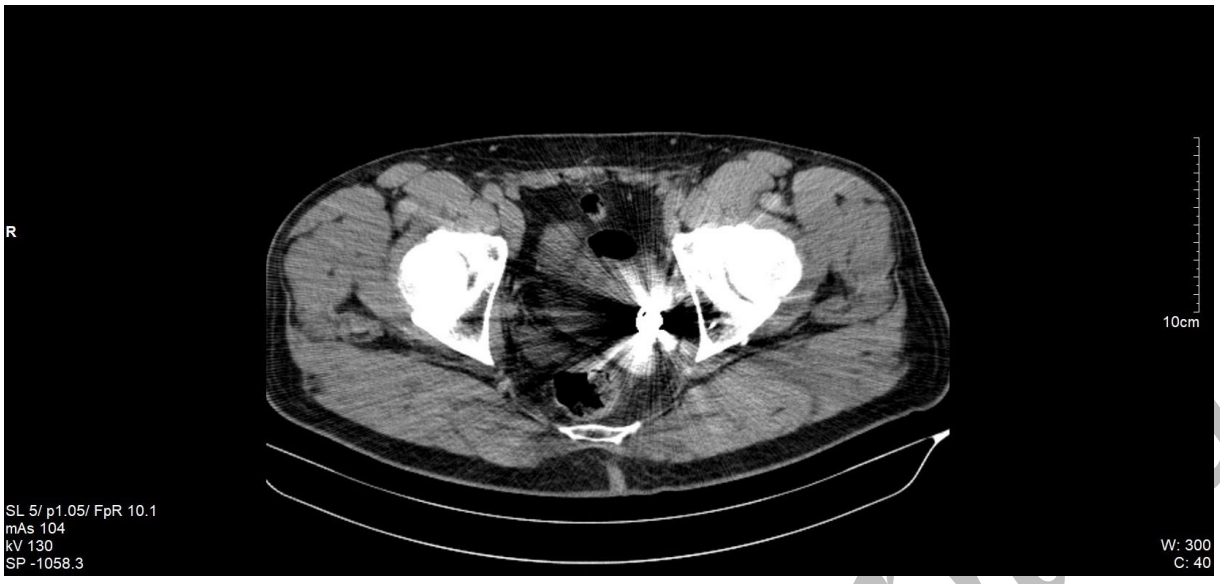

Figure 3. Computed tomography of the pelvis showing a foreign body with metallic density in the bladder cavity

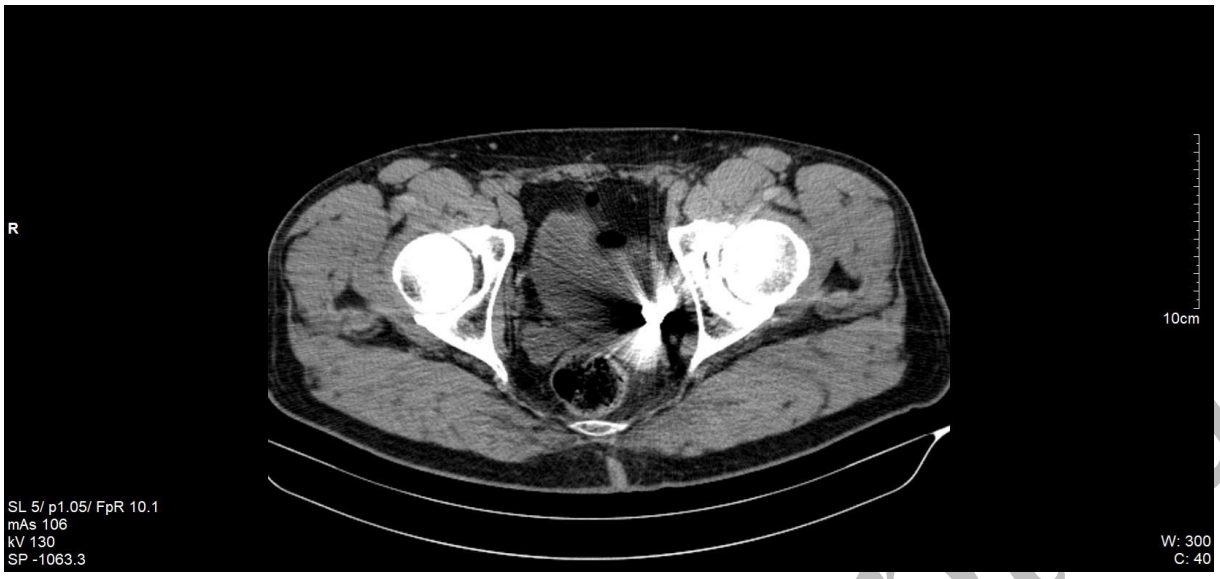

Figure 4. Computed tomography of the pelvis showing a foreign body with metallic density in the bladder cavity

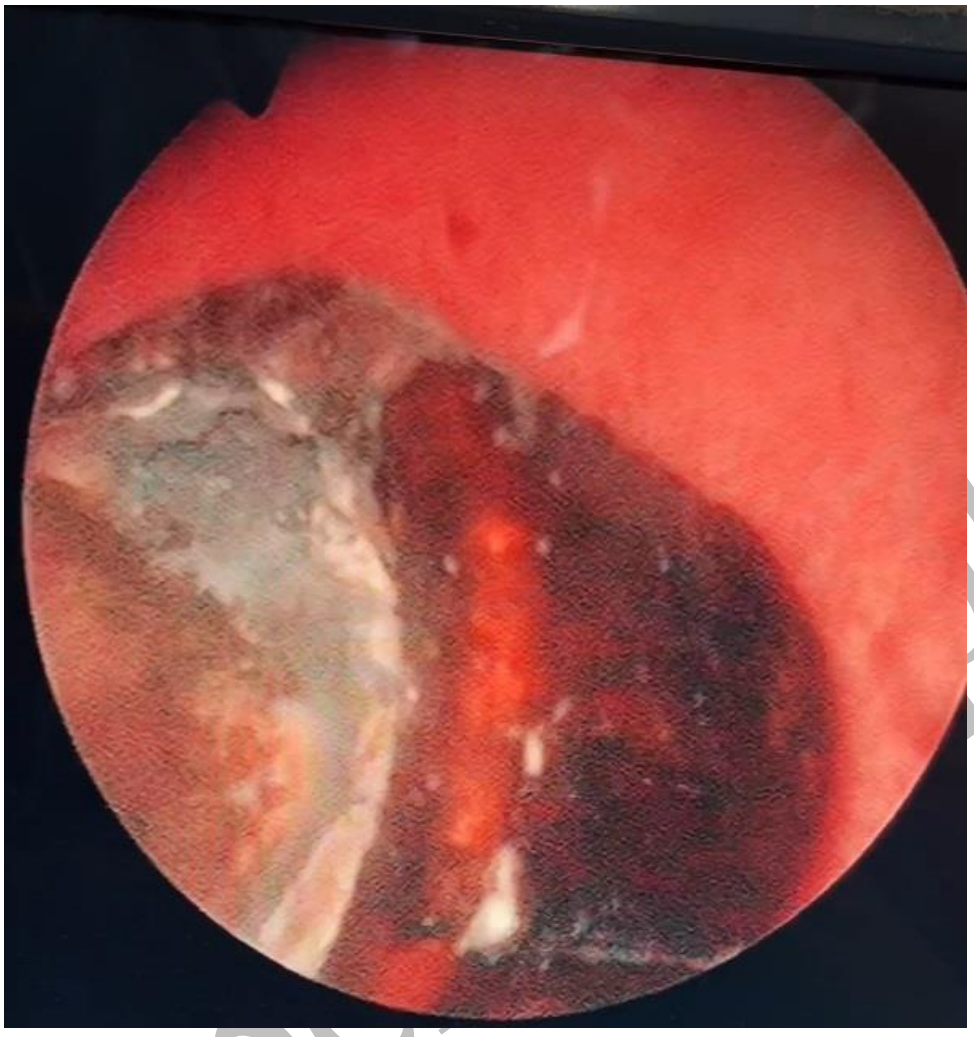

Figure 5. Endoscopic view of the bullet that migrated into the bladder

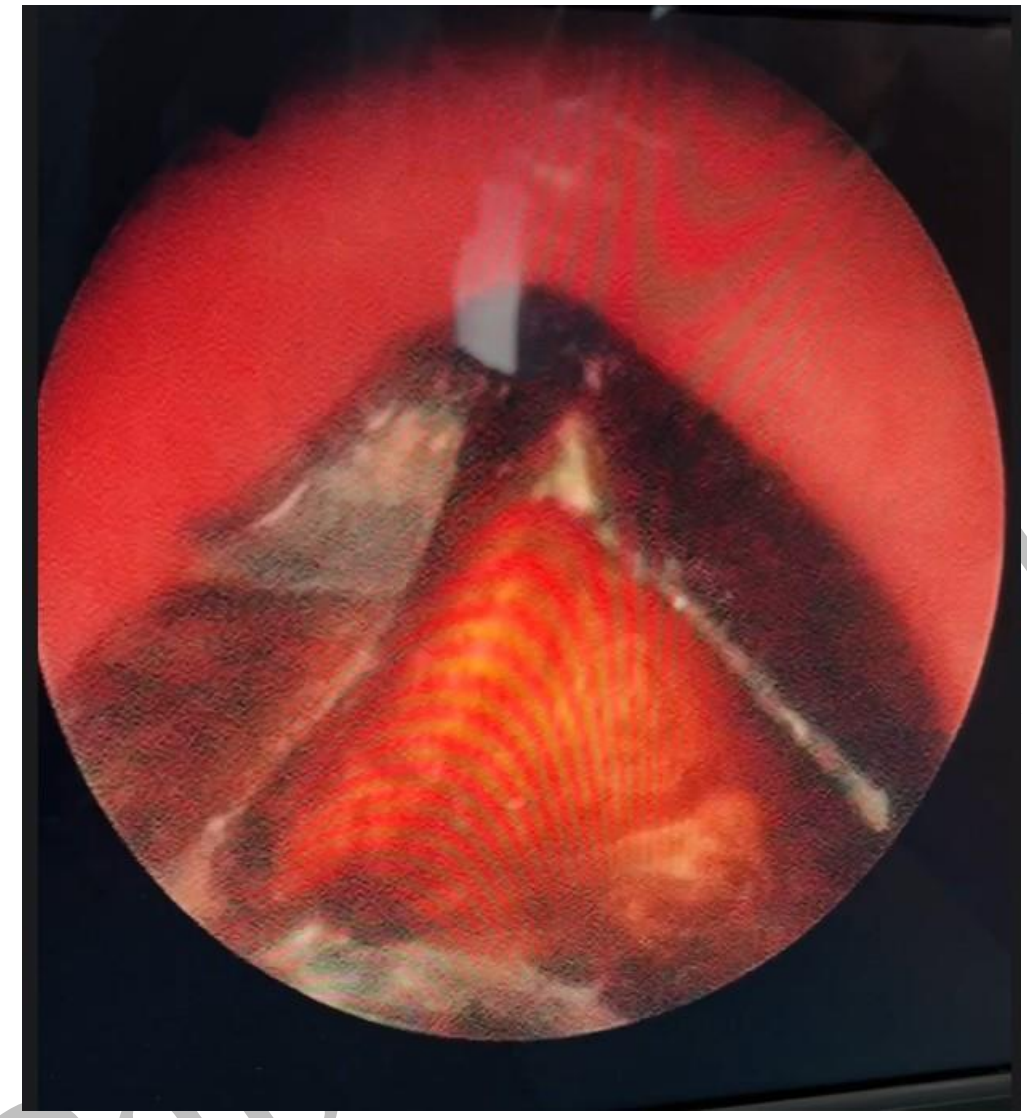

Figure 6. Endoscopic view of the bullet that migrated into the bladder

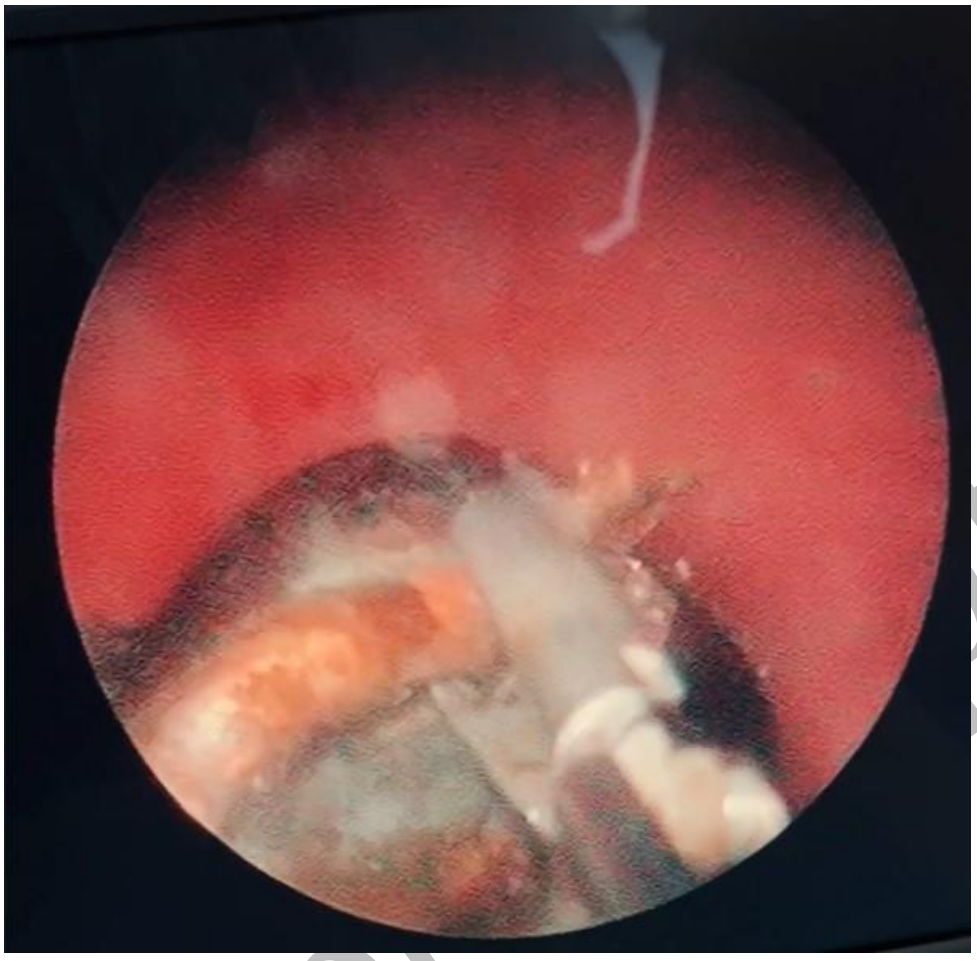

Figure 7. Unsuccessful endoscopic attempt to remove the bullet from the bladder

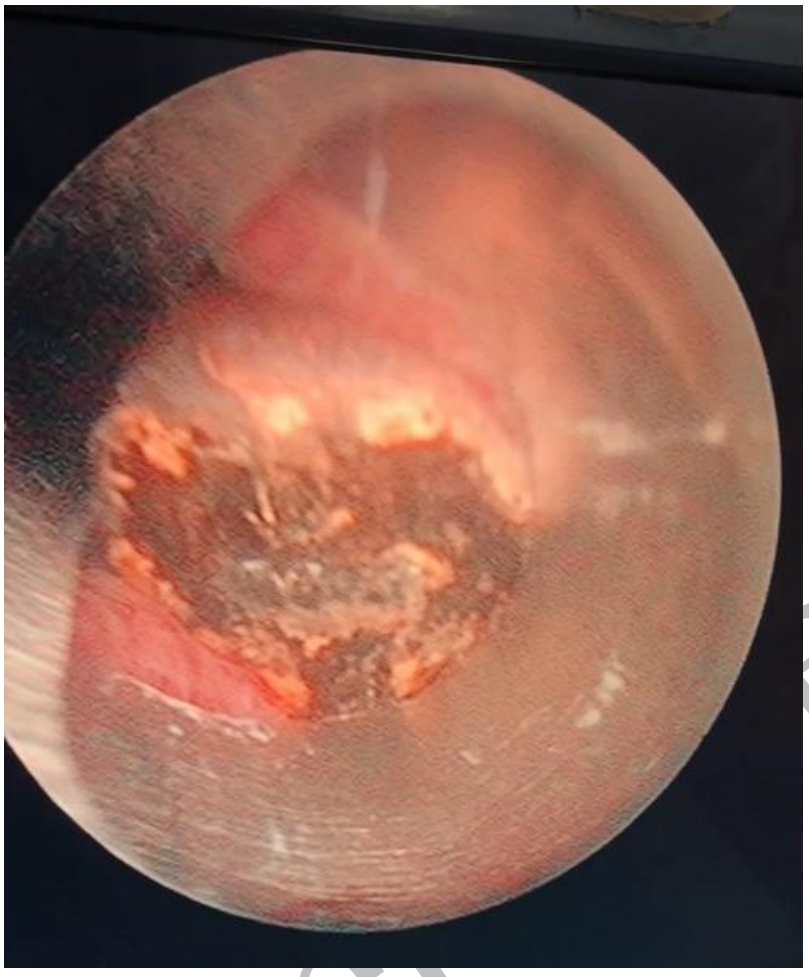

Figure 8. Unsuccessful endoscopic attempt to remove the bullet from the bladder

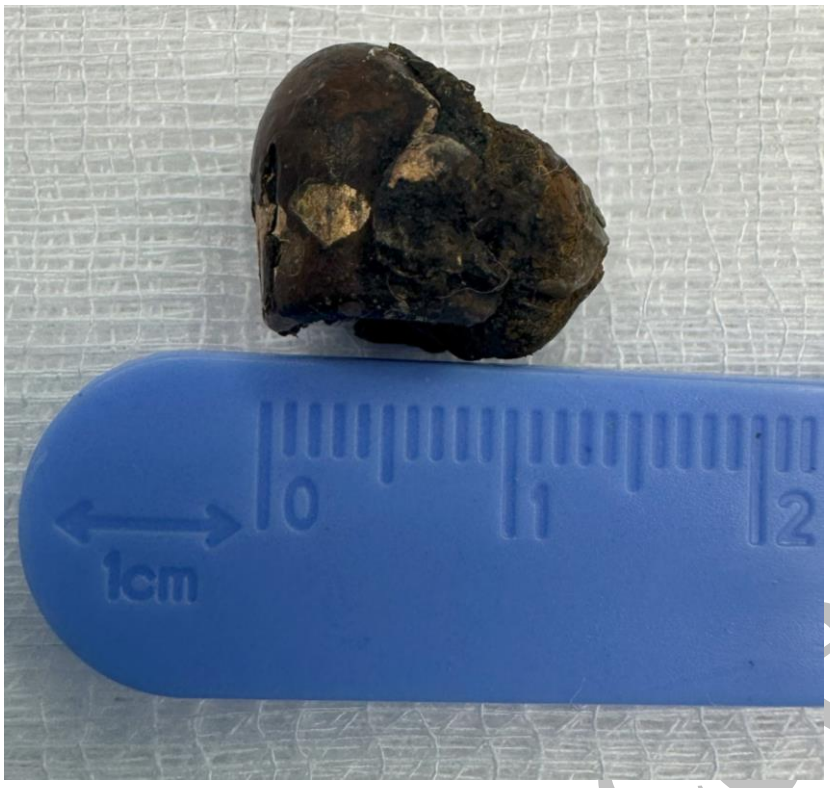

Figure 9. The extracted bullet

Figure 10. The extracted bullet

