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A Case Report

When The Bullet Finds The Only Kidney A Rare Happening Of A Stray Bullet Embedded In A Solitary Functioning Kidney.

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ABSTRACT:
Genitourinary trauma as a result of penetrating injury by gunshot wound occurs in about ten per cent. A bullet left in a solitary functioning kidney is extraordinarily rare. We report the case of a young patient who suffered a gunshot injury in that very rare situation--a bullet remaining in his only operational kidney for years and inflected calculus which had grown over it. After successful endoscopic, percutaneous lithotripsy, the Bullet was retrieved from the patient's urinary bladder.

Keywords: PCNL, Renal Stone, Firearm injury

INTRODUCTION:
Genitourinary trauma resulting from gunshot injuries is observed in roughly 10% of incidents (1). Though injuries from firearms mass affecting organs are quite common, the issue of foreign bodies remaining in the body after such incidents is not only a challenge in treating war injuries but also a difficult topic in clinical surgery. The most common surgery in these cases involves keeping the Bullet inside. When a bullet has been left inside a kidney after a gunshot wound, the problem of dealing with such bullets once they have healed presents complex surgical challenges. But this scenario is uncommonly encountered under any other name, which calls for both demanding diagnoses and a challenging operation. (2,3) A stray bullet in the little used single kidney is very rare. (4) No matter how long it has been retained, any foreign body in the kidney must be removed because that is a single functioning kidney's only route to salvation from such calamities as crystallization, infection or blockage. (5) Previous methods for removing foreign bodies from the kidney require great trauma on the body and a long recuperation for the patient, whether it be by open or laparoscopic surgery(with its extensive bleeding). (6) On the other hand, percutaneous nephrolithotomy, a minimally invasive surgical procedure, is often used to treat upper urinary tract stones, ureteropelvic junction obstruction and for removing foreign bodies such as displaced ureteral stents or bullets (7). This article presents the first case in which a bullet has been retained in an SFK.

Case Presentation:

A 28-year-old gentleman resident of the newly merged district of a federally administrated tribal area (FATA) presented to the outpatient department with right flank pain for the last year. The pain was dull, aching in character, moderate in intensity, not radiating to the groin and associated with nausea and vomiting. The patient gave a history that he has a congenitally absent left kidney. He suffered a firearm injury in the abdomen 10 years back (A stray bullet: Entry wound being shown in figure 1) that resulted in transient hematuria that settled in one week. He was treated conservatively in the Agency headquarters hospital. On examination, A well-built gentleman lying in

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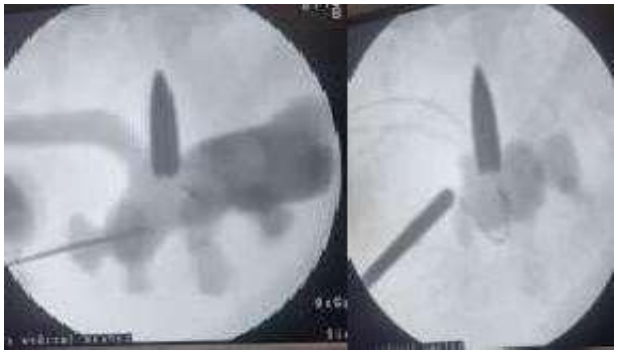
Bed with a temperature of 98.4 degrees Fahrenheit, a pulse rate of 72 beats per minute, and a blood pressure of 130/70

MmHg. The patient is also well-oriented in terms of time, space, and person. The remainder of the systemic and general physical examinations were uneventful. Numerous RBCs, numerous pus cells in the urine without any growth on the pee culture, and sensitivity were all observed in the



Laboratory. As shown in the table below, all tests (blood complete, renal function test, virology, etc.) were within normal limits. Multiple radiopaque shadows were visible in the right renal area on an X-ray of the kidney, ureter, and bladder (KUB) (figure 2). After a computerized tomography scan, multiple right renal stones with a density of 1310 HFU and a bullet in the renal pelvis with a density of 3100 HFU (figure 3). The scan also confirmed an absent left kidney. Since the patient gave a history of firearm injury and the presence of radiological evidence, with a high possibility that the multiple radio-dense shadows are stone formations over a bullet. Thus, sound wave lithotripsy and ureteroscopic laser lithotripsy using a retrograde technique were considered contraindicated. Following a consultation, the patient was scheduled for an endoscopic bullet removal and a traditional right percutaneous nephrolithotomy to remove the calcified stone formation covering the Bullet.The bullet shell's surrounding stone piece was chipped away using the pneumatic probe. Large chunks of stone were removed. The Bullet was seized, drawn into the sheath, and extracted because the pneumatic lithoclast was unable to break apart the metal. A double J stent was positioned anterogradely. Additionally, a nephrostomy tube was inserted and secured. The photographic representation of the process is shown in Figures 5, 6, and 7. The patient's operation went well, and there was no need for an unforeseen blood transfusion, post-operative fever, or sepsis. The nephrostomy tube and urine catheter were withdrawn on the first post-operative day, and the patient was released to take home medicine on the second post-operative day in a stable condition of health. After a month, we checked up with the patient. Following the removal of the Double J stent, no problems were seen.

Table 1 Laboratory Investigations

S.No	Test	Result	S.N	Test	Result
1	WBC	8000	6	HBs Ag	**Negative**
2	HB	13.5	7	Anti-HCV	**Negative**
3	S. Creatinine	0.8	8	Anti-HIV	**Negative**
4	S. Urea	24	9	RBS	**88**
5	**RBS**	**110**	**10**	**S. Calcium**	**8**

Discussion

To find the Bullet's exact position, we used fluoroscopic guidance to choose where to insert the needle accurately. During the surgery, we also used ultrasound to guide the needle directly to the Bullet. Using both these modalities together helped us avoid damaging the kidney or its blood vessels, which is crucial for controlling bleeding and having a clear view during surgery. Wang B et al. used CT with 3D reconstruction and ultrasound guidance for the same purpose (7). Jhaveri H et al. (4) used percutaneous ultrasound lithotripsy to fragment stones over Bullets; we used the pneumatic modality of lithotripsy for the same purpose. As we had passed a 28Fr am Platz sheet, we could easily retrieve the Bullet once it was free from the surrounding tissue and the stones. Dealing with such challenging cases is associated with inadvertent injury, apart from bleeding or infection (8); we, however, did not face any such intraoperative or post-operative complications. Although the surgery was successful, the patient went home in a good state of health. There are certain aspects which might have been taken into account. For instance, the patient presented to us after years so that he might have been evaluated for lead poisoning. Another aspect is that these cases rarely occur, so the effectiveness of minimal invasive p The percutaneous approach has to be established despite the fact that we had a good experience with it. Thus, reporting this case may be of paramount importance for the purpose being stated above.

Conclusion

This rare case describes a patient who suffered a firearm injury from a stray bullet which remained in the solitary kidney for years with superimposed stones formation. He had remained symptomatic. Given that the stone was broken and the Bullet was recovered via an endoscopic technique, this particular instance can be effectively treated.

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Conflict of interest: There is no conflict of interest to disclose.

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Ethical approval: the Institutional Review Board according to the publisher, this case report was obtained.

Consent Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent form is available for review by the editor-in-chief of this journal upon request.

Authors Contribution

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REFERENCES:

1. N.M. Conman, McAninch JW, S.P. Porten, J.B. Myers,S.D. Blaschko, H.S. Bagga, et al., Gunshot wounds to the lower urinary tract: a single-institution experience, J. Trauma Acute Care Surg. 2018:74 :(3) 725–730

2. Fowler KA, Dahlberg LL, Haileyesus T, et al. Firearm injuries in the United States. Prev Med. 2018; 79:5–14.

3. Taha DE, Raheem AA, Aljarbou A, et al. A large renal bullet that resembles a large renal stone. A rare case scenario. Int J Surg Case Rep. 2021; 85:106180

4. Jhaveri H, D'Angelo M Late presentation of a 9mm bullet in the ureteropelvic junction causing acute renal failure in a solitary functioning left kidney, Journal of Endourology Case Reports 2018: 4:1, 173–175, DOI: 10.1089/cren.2018.0068.

5. Mehta C, Loecher M, Sih A, Reese AC. A report of a retained bullet in the bladder, which migrated from an extraperitoneal injury. Urol Case Rep. 2020 Oct 22; 34:101463. Doi: 10.1016/j.eucr.2020.101463.

6. Nerli RB, Magdum PV, Sharma V, et al. Forgotten/retained double J ureteric stents: a source of severe morbidity in children. Afr J Paediatr Surg. 2019; 13:32–5

7. Wang B, Yang L, Yuan J, Qin W, Wu P, Yang X, Hou G, Yu M, Gong X, Xu Z, Qin J, Gao X, Ma S, Wang F. Percutaneous nephroscopy combined with the laser used for right kidney bullet extraction: A case report. Medicine 2023; 102:6(e32841).

8. Sierra-Diaz E, Dávila-Radilla F, Espejo-Vázquez A, et al. Incidence of fever and bleeding after percutaneous nephrolithotomy: a prospective cohort study. Cir Cir. 2022; 90:57–63.