

An Atypical Location of a Projectile in
Sacrum about a CaseDiouf AB*, Daffé M, Dembélé B, Sarr L, Sane AD, Coulibaly NF, Nguessi I and
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Abstract

Introduction: Since 1990, several investigators have reported an increase in the incidence of spinal cord injuries, with penetrating trauma being the leading cause of spinal cord injury in some urban trauma centers [1]. We report a case with an inlet at L4-L5 and a final migration at S1.

Observation: Trader of 28 years, received January 21, 2016 for low back pain and desire to remove a projectile at the level of the spine. The loco-regional examination found a scar of the orifice in projection of the fourth and fifth lumbar vertebra. The radiological assessment carried out showed: on radiography the projectile at the sacral level; And to the computed tomography, an oval hyper dense formation of size 31x15x10 mm extended from the first sacral vertebra to the second sacral vertebra in relation to the evoked ball with a solution of continuity of the right blade facing it.

At the exploration, one noticed the ball buried in the sacral channel pushing back the nerve elements in posterior and with a prominence of a radicular section to the right, and a fracture of the blade to the right.

Discussion: Spinal lesions by firearm are increasingly common. Kuijen et al. [2] were able to identify four cases of bullets left in place with delayed neurological symptoms. However, these bullets remained localized in epidural as in our patient. The only discrepancy is that the symptomatology was early in our clinical case with a motor unilateral motor deficit secondary to an axonal lesion. The decision to leave or remove a fragment lodged in the spinal canal depends on several factors. Given its composition in copper and lead, the risk of further development of neurological complications was evident. He also had other neurological complications, not related to the toxicity of the different components of the projectile, but to its presence in the sacral canal. And this is all the more increased by the narrowness of this channel and by the rather large number of mesh roots found there.

Conclusion: In addition, imaging plays an important role in the initial management of patients with hemodynamically stable bales regardless of the location of the projectile. CT is very useful to objectify the trajectory of the ball and to make a precise lesional balance thus making it possible to provide valuable information for the management of this condition.

Introduction

Since 1990, several investigators have reported an increase in the incidence of spinal cord injuries, with penetrating trauma being the leading cause of spinal cord injury in some urban trauma centers [1]. Spinal cord injuries cause more complete neurological lesions than those caused by closed trauma. Few cases are reported in the literature of foreign bodies with preservation of the function of the Cauda equine [1].

We report a case with an inlet at L4-L5 and a final migration at S1. We will discuss the different types of migration mechanism as well as the therapeutic choice.

Observation

Trader of 28 years, received January 21st, 2016 for low back pain and desire to remove a projectile at the level of the spine. The current symptomatology dates back to three months and would have started in Libya. Indeed, it would be during his sleep in his room that he would have received a bullet lost by firearm. Initial management would have been done in Libya by local care until healing but without any gesture of ablation of the projectile (Figure 1).

The suites of care were simple with a healing of the front door on the 21st day. This was accompanied by a persistence of sphincter disorders, which resulted in loss of urine staining the underwear (more than five times a day), loss of stool (about ten times a day) and morning erectile dysfunction. The rectal examination found a tonic sphincter with traces of stool to the fingers.

On the motor plane, there was a walking with a limp right to the right.

The loco-regional examination found a scar of the orifice in projection of the fourth and fifth lumbar vertebra. During this period there was no lumbar arch (Figure 2).

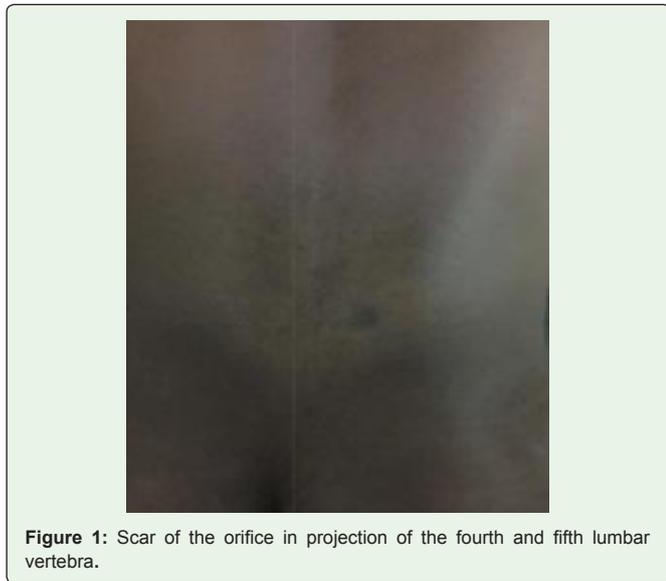


Figure 1: Scar of the orifice in projection of the fourth and fifth lumbar vertebra.



Figure 2: Projectile in the second sacral vertebra (x ray).

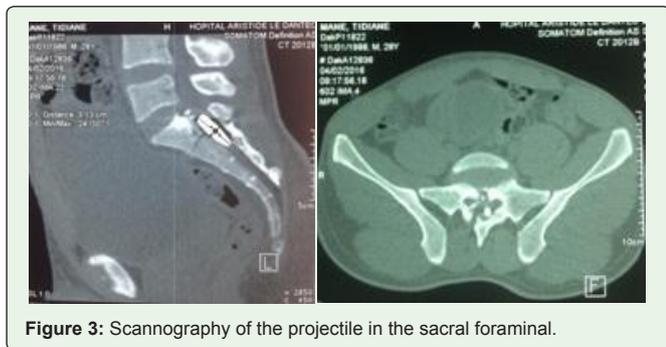


Figure 3: Scannography of the projectile in the sacral foraminal.

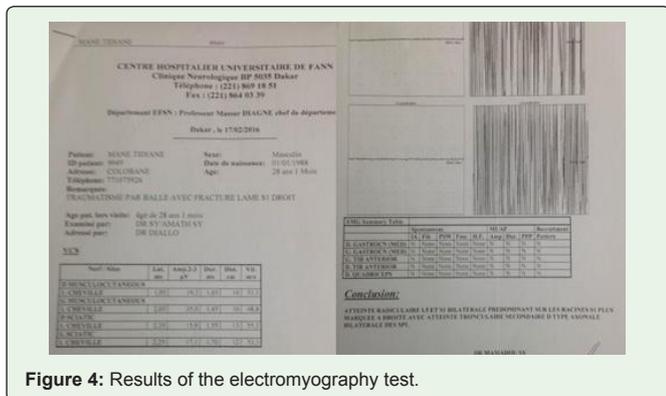


Figure 4: Results of the electromyography test.

The radiological assessment carried out showed: on radiography the projectile at the sacral level;

And to the computed tomography, an oval hyper dense formation of size 31x15x10 mm extended from the first sacral vertebra to the second sacral vertebra in relation to the evoked ball with a solution of continuity of the right blade facing it (Figure 3).

The electromyography performed was in favor of an axonal motor lesion of the sciatic nerves external popliteal and sciatic popliteal internal, with anterior radicular involvement L5 -S1 more severe on S1 and right.

In conclusion, the clinical and paraclinical evidence was in agreement with the surgical option chosen, which was laminectomy under scopic regression.

At the exploration, one noticed the ball buried in the sacral channel pushing back the nerve elements in posterior and with a prominence of a radicular section to the right, and a fracture of the blade to the right. We removed the projectile (Figure 4).

The surgical follow-up was simple with a verticalization of the patient overnight. On the first postoperative day, there was a regression of the symptomatology with an autonomous walk with discreet lameness, a disappearance of the sphincter disorders and the return of the morning erection.

At the last 10-month follow-up, the patient was no longer suffering from pain and walking was independent. The motor axonal impairment persisted in EMG.

Discussion

Spinal lesions by firearm are increasingly common [1,3].

Several types of foreign bodies have been reported close to the spine, including surgical compresses, Kirschner pins, bullets, bone fragments [4,5].

Kuijen et al. [2] were able to identify four cases of bullets left in place with delayed neurological symptoms. However, these bullets remained localized in epidural as in our patient. The only discrepancy is that the symptomatology was early in our clinical case with a motor unilateral motor deficit secondary to an axonal lesion. One of the assumptions was that the blade injury caused by the blade could have caused a root lesion. And this was all the more reinforced by the discovery to the peroperative exploration of a right radicular section.

The ballistic objects produce sound waves of pressure preceding the projectile. The speed of these waves is 4,800 feet per second; Inducing a pressure of 117 atmospheres. It has been shown that the temporary cavity created by the pressure on a bone structure could smash it, the bone fragments thus playing the role of secondary missiles [6]. It is not necessary for these missiles to strike the spinal cord to cause neurological damage. But most spinal cord injuries occur when the bullet passes through it or when it is lodged in it [6].

The decision to leave or remove a fragment lodged in the spinal canal depends on several factors. The absolute indications are neurological deterioration, infection and lead toxicity. However, in the absence of these absolute indications, the extraction of bullets from the spine remains under discussion [7]. This was one of the motivations behind our therapeutic decision because, in addition

to the right motor impairment, urinary losses as well as erectile dysfunction constituted a real social discomfort in our patient.

Recent studies have, however, advocated a more conservative approach [7]. Nathaniel L. and Tindel et al. [8] showed in an experimental study that the extraduralized fragments did not have a deleterious effect on the spinal cord, which apparently is protected by the meninges. On the other hand, intradural implantation may produce a more damaging reaction, resulting in a fibrous reaction in the mother-arachnoid layer. It was observed that copper destroyed axons and myelin causing a significant area of gliosis in the rest of the medullary tissue. Lead resulted in a similar but less severe local response.

Jeffery et al. reported the case of a Vietnamese refugee carrying an intradural bullet keeping a pony tail function preserved for 18 years [9]. Rajan et al. have reported the case of a bullet passing through the spinal column from the cervical region to the sacral region, demonstrating that migration of the fragment by itself is not a risk factor for neurological deterioration [10].

Avci et al. reported a delayed neurological symptomatology compared to the spontaneous migration of a bullet in the spinal lumbar spine: motor weakness only manifested a few days after the trauma [11].

The opinion of Kuijen et al. is that if a neurological deficit occurs, which is possible after several years of latency, surgery should be considered according to the severity and type of deficit presented [2]. Mann et al. reported the case of a 13-year-old girl injured by gunshot wounds with incomplete neurological lesions. The bullet was removed cold and without precipitation [12]. Ledgerwood believes that the question of whether to withdraw the ball must be based on the assessment of the risks involved in leaving it in place in relation to the risks involved in the attempt to withdraw it. Late isolated neurological symptoms can occur up to 15 years after the trauma [7,13-16].

In our case the foreign body was a bullet. Given its composition in copper and lead, the risk of further development of neurological complications was evident. He also had other neurological complications, not related to the toxicity of the different components of the projectile, but to its presence in the sacral canal. And this is all the more increased by the narrowness of this channel and by the rather large number of mesh roots found there.

Conclusion

Spinal trauma of ballistic origin in a zone of peace is not uncommon with the urbanization of African cities.

In addition, imaging plays an important role in the initial management of patients with hemodynamically stable bales regardless of the location of the projectile. CT is very useful to objectify the trajectory of the ball and to make a precise lesional balance thus making it possible to provide valuable information for the management of this condition.

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