

**GIANT METAL INTRAOCULAR FOREIGN BODY: CASE REPORT****Bouziane Soukaina\*, Hassimi Ouail, Bennis Ahmed, Chraïbi Fouad, Abdellaoui Meriem, Benatiya Andaloussi Idriss**

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Article Received on 03/11/2022

Article Revised on 24/11/2022

Article Accepted on 14/12/2022

**ABSTRACT**

Ocular perforating injuries are frequent reasons for admission, particularly in young patients, and carry a significant risk of blindness. The therapeutic management and prognosis depend on the initial lesion assessment and the nature of the perforating agent. We report the case of a 25-year-old female patient with a right ocular trauma caused by a metal nail, admitted the same day to the ophthalmologic emergency room and then sent to the operating room. The procedure consisted of extraction of the foreign body, which measured 21 mm, with suture of the corneolimbic wound. The postoperative workup included a post-traumatic cataract, an iris section, and an intravitreal hemorrhage with retinal detachment, thus justifying a repeat surgery.

**KEYWORDS:** Trauma, foreign body, giant, metallic.**INTRODUCTION**

Perforating ocular trauma is a significant cause of blindness in young people, especially in our context.<sup>[1,2]</sup> The removal of an intraocular foreign body (IOFB) depends on its location and associated complications.<sup>[3]</sup> Endophthalmitis, vitreoretinal organization with the risk of retinal detachment and toxic damage to the retina by heavy mineral salts are the main complications to be feared, so prevention, as a public health measure, is still required.<sup>[4]</sup>

We report the case of a young patient, victim of a right ocular trauma by metallic nail.

**MEDICAL OBSERVATION**

A female patient, 25 years old, was admitted to the ophthalmologic emergency room following an ocular projection trauma of a metallic foreign body during a domestic activity, presenting initially with a sudden decrease in visual acuity in the right eye with pain and ocular redness.

The initial clinical evaluation included a decrease in visual acuity limited to a questionable light perception, associated with a jagged inferior corneolimbic wound from 5 to 7 o'clock, a herniated iris, and a blood-spotted mixed vitreous from contact with the opposing metallic foreign body [Figure 1]. The lens appeared cataracted, making examination of the posterior segment impossible. A standard radiograph of the orbits in front and in profile was requested, showing a nail-shaped foreign body in the

right orbit [Figure 2]. The patient was admitted directly to the operating room, where he underwent extraction of the giant intraocular foreign body (measuring 21mm in length) which turned out to be a nail [Figure 3]. The second step consisted of a trimming with suture of the corneal wound after reintroduction of the iris, and an anterior vitrectomy. Post-operative evaluation of the affected eye after 24 hours showed visual acuity still limited to light perception without, an edematous cornea, and a sutured wound with clean watertight stitches. The anterior chamber is formed by a ruptured post-traumatic cataract without mass [Figure 4]. Due to the inaccessibility of the posterior chamber, an ocular ultrasound was performed showing intravitreal hemorrhage with localized retinal detachment [Figure 5]. The patient was then scheduled for a combined surgical revision (cataract cure, iridoplasty with posterior vitrectomy) after clearing of the media.

**Figure 1: Photo-color of the right eye showing the corneolimbic wound with IOFB through.**



Figure 2: Standard profile radiograph of the right eye showing a radiopaque IOFB through the eyeball.

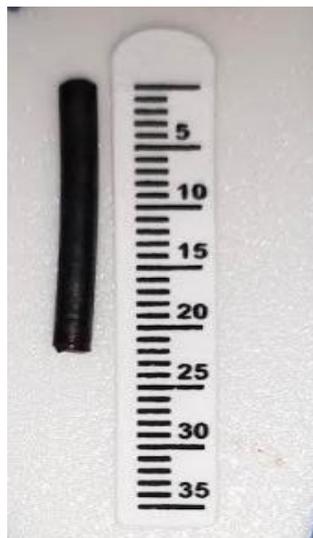


Figure 3: Photography showing the metallic IOFB measuring 21 mm.



Figure 4: Photo-color of the right eye showing the postoperative result after extraction of the IOFB and suture of the wound.



**Figure 5: Ocular ultrasound showing a hyperechoic vitreous organization related to an intravitreal hemorrhage associated with a localized retinal detachment.**

## DISCUSSION

The most common cause of intraocular foreign bodies is the intraocular penetration of a small piece of metal as a result of a projection during an occupational activity. Other metallic foreign bodies resulting from firearm assaults have become less common due to changes in legislation.<sup>[1]</sup>

A review of the literature by Loporchio.D et al.<sup>[2]</sup> showed that IOFB can penetrate through the cornea (65%), the sclera (25%), or through the limbus (10%). This series documented the cornea (zone I involvement) as the primary entry in all patients, which was also the case in our female patient.

A careful ophthalmologic examination supported by a thorough radiologic workup is essential to identify the site and nature of the IOFB. The extraction of the IOFB depends on its location, its nature, but also on the transparency of the lens and the presence or absence of vitreoretinal damage.<sup>[3]</sup>

CT scan with thin sections is considered the reference examination in the detection, localization and characterization of metallic and non-metallic IOFBs.<sup>[3,4]</sup>

The most serious complication of retained iron-containing IOFB is the development of bulbar siderosis.<sup>[4,5]</sup> Therefore, IOFB require prompt and urgent evaluation and management due to the clear risk of irreversible blindness.<sup>[4,5]</sup>

Surgical management of IOFBs includes closure of the wound as soon as possible; to avoid the risk of endophthalmitis.<sup>[6]</sup> If the IOFB is present in the anterior segment, it can be removed at the same time. However, if the latter is located in the posterior segment, it can be removed during the primary or secondary surgery, depending on the surgeon's clinical assessment and practices.<sup>[7]</sup>

## CONCLUSION

In penetrating ocular trauma, IOCs penetrate primarily through the cornea, causing broad-spectrum ocular tissue damage. Various visual outcomes are seen, depending on the area affected, the size of the IOC, and the operative difficulties encountered during removal. Posterior segment ocular trauma is a poor prognostic factor. A careful ophthalmological examination, associated with a thorough and adapted radiological exploration are essential to establish an initial damage assessment, allowing to identify the localization and the characteristics of the IOC. The time interval between the trauma and the consultation is a crucial prognostic factor, which conditions the visual but also general prognosis.

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