Isolated orbital floor fracture lateral to infraorbital nerve: report of 2 pediatric patients

Orbital floor fractures usually occur medial to the infraorbital nerve. The bone posteromedial to the infraorbital nerve has been reported to be thinner than that lateral to the nerve, which translates into a predilection for an orbital floor fracture in the posteromedial area. Although orbital floor fractures sometimes occur in the portion lateral to the infraorbital nerve, to date they have been reported in the literature to occur together with a medial segment fracture or fracture of an orbital rim, or both. One previous report examined the site of isolated floor fractures and referred to a fracture lateral to the infraorbital nerve, but it did not include a detailed description of the case.

We retrospectively reviewed all patients with orbital fracture treated in our department from March 2009 to February 2015. Among the 449 patients (334 male, 115 female; mean age 34.9 years, range 1–91 years; 450 sides: 207 right and 243 left) were 76 pediatric patients (aged ≤15 years). Two of these patients (2 sides) had an isolated orbital floor fracture lateral to the infraorbital nerve.

The Institutional Review Board of Aichi Medical University approved this study, which followed the tenets of the Declaration of Helsinki. Written, informed consent to publish these case reports was obtained from the patients’ guardians.

The first patient was a 15-year-old male who hit his left eye on an opponent’s head during a rugby match. At the initial examination, his binocular single vision field was limited to 30 degrees in downward gaze. The patient did not show enophthalmos or numbness in the left cheek region. Coronal computed tomographic (CT) images revealed an isolated trapdoor orbital floor fracture lateral to the infraorbital nerve with orbital fat incarceration (Fig. 1A). The floor medial to the nerve was slightly displaced downward. The left inferior rectus muscle was pulled toward the fracture site by the incarcerated orbital fat.

We measured the bone thickness in relation to the infraorbital nerve on the contralateral side on 3 consecutive coronal CT images using the caliper tool of the viewer (ShadeQuest/ViewR; Yokogawa Medical Solutions, Tokyo, Japan). The thinnest part was located in the lateral portion (lateral: 1.32–2.11 mm; medial: 1.55–1.92 mm).

Although apraxia of the inferior rectus muscle was a possible cause of the downward restriction, traction of the inferior rectus muscle toward the fracture site was also a possible cause. We reduced the fracture 4 days after the injury, confirming that the fracture site was located lateral to the infraorbital nerve (Fig. 1B). The medial segment of the orbital floor was not fractured. One month later, his binocular single vision field improved to within the normal range.

The second case was a 4-year-old male who fell and hit his right eye against a chair. At the first examination, he noticed diplopia in all eye positions, although we were not able to examine his binocular single vision field using...
Goldmann perimetry because he did not understand the examination. He did not show enophthalmos or numbness in the right cheek region. Coronal CT images illustrated a right isolated orbital floor fracture lateral to the infraorbital nerve (Fig. 1C).

We measured the bone thickness in relation to the infraorbital nerve on the contralateral side in the same manner as for case 1. The lateral portion was thinner (0.55–0.82 mm) than the medial portion (0.98–1.13 mm).

We reduced the fracture 2 days after the injury because of diplopia in all eye positions. Three months later, he perceived no diplopia.

In these 2 patients, the bone lateral to the infraorbital nerve was thinner than the medial portion. Although we measured bone thickness on the contralateral side in each case, the orbital structures were generally symmetrical.

The medial portion has been thought to be thinner than the lateral portion, resulting in a predilection toward the fracture site. Our patients may be exceptions, but in the future we need to investigate the bone thickness in relation to the infraorbital nerve in a young population.

Despite slight downward displacement of the medial segment in case 1, we found no fracture of the orbital floor medial to the nerve. Orbital floor fracture of the bone lateral to the infraorbital nerve has consistently been reported to accompany a medial segment fracture and/or fracture of an orbital rim. Because the facial skeleton in pediatric individuals is more elastic and flexible than that in adults, bone rigidity may have contributed to the resistance of the medial segment to force in case 1, causing the isolated orbital floor fracture lateral to the infraorbital nerve.

In conclusion, we report 2 pediatric patients with an isolated orbital floor fracture lateral to the infraorbital nerve, possibly associated with an anatomical weakness of the affected site.

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REFERENCES

Delusional parasitosis involving the eyelid

Delusional parasitosis is an uncommon and potentially debilitating disorder characterized by the patient’s fixed belief that his or her skin and body is infested with parasites, although there is no medical or microbiological evidence for this.1–8 They rarely present to the ophthalmologist and more commonly are seen by general practitioners and dermatologists.1 It is important that ophthalmologists be aware of this entity because the eye and eyelids may be one of the sites involved.9–13 We present such a case involving the left upper eyelid. This Health Insurance Portability and Accountability Act–compliant case report was exempt from Institutional Review Board review and was performed in accordance with the tenets of the Declaration of Helsinki.

A 68-year-old female was seen in consultation for a suspicious lesion involving the left upper lid of 6 weeks’ duration (Fig. 1A). In its early phase, the patient picked at it and it began to grow. She was quite certain she saw something moving on its surface. She volunteered that she had a woodpile beside her house and it likely had parasites within. Every time she picked at the growth she noted the suspected parasite move. She collected samples of the suspected parasite for us to examine (Fig. 1B). She also did some “Google research” and provided us with a name (acanthocephalan Corynosoma wegeneri) and a picture she located on the internet (Fig. 1C) that was (in her view) identical to what she had seen. On examination, there was a superficial, elevated, flaking lesion, nontender to touch involving the medial aspect of the left upper lid skin (Fig. 1B). There was an absence of pearly borders, central ulceration, and telangiectatic vessels. An excisional biopsy was performed. The patient’s specimen samples were also submitted.

Histopathologic examination showed hyperkeratotic debris and fragments of skin consistent with an irritated seborrheic keratosis. There was no evidence of parasitic infestation in the main body or tissue fragments submitted. The patient was reassured of the benign nature of the lesion. There was no regrowth in the 6 months after biopsy. A provisional diagnosis of delusional parasitosis was made.