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CASE reports

Fracture of the Anterior Nasal Spine: Report of a Case

M. M. Nazif, D.D.S., M.D.S.
R. C. Ruffalo, D.M.D., M.A.T.
W. A. Caudill, D.M.D.

Abstract

Fractures of the anterior nasal spine are very rare. A case is reported where a fracture involving the anterior nasal spine was the only significant sequela of a traumatic injury to the face. Appropriate methods of diagnosing such a fracture are discussed.

Introduction

Traumatic injuries to facial bones are quite common.[1] However, injuries to the anterior nasal spine are quite rare. Only one such case has been reported.[2]

The purpose of this paper is to report a case of a fracture involving the anterior nasal spine.

Report of a Case

A 14-year-old white male reported to the Emergency Room of Children's Hospital of Pittsburgh complaining of "persistent swelling of the upper lip and the base of the nose". The day prior to presentation in the Emergency Room, the patient had fallen against a metal rail and sustained an injury to the right side of his face. The patient's medical, social, and family histories were unremarkable.

Physical examination revealed a slight swelling involving the upper lip which extended to the inferior border of the nose with slight bilateral ecchymosis (Figure 1). Slight ecchymosis of the right supraorbital ridge was also evident. The patient also exhibited multiple facial pigmented nevi. Intraorally, severe ecchymosis was observed involving the maxillary frenum area and extending from the attached gingiva of the maxillary centrals to the vermilion border of the upper lip. Two small areas of abrasion were visible on the attached gingiva covering the unerupted maxillary right and left cuspids (Figure 2). The dentition was clinically and radiographically intact. The frenum area was tender to palpation. A lateral extraoral x-ray examination was completed using a standard occlusal film (Figure 3). The film showed a definite irregularity at the tip of the anterior nasal spine with overlying soft tissue swelling.

A thorough clinical as well as radiographic examination of the facial bones confirmed the diagnosis of a fracture of the anterior nasal spine. Only the lateral skull film, however, was considered diagnostic (Figure 4). There was no sign of significant displacement, therefore, no treatment was considered necessary. The post-operative course was uneventful and healing proceeded normally.

Figure 1. A slight bilateral ecchymosis adjacent to the anterior nasal spine as seen one day following trauma.

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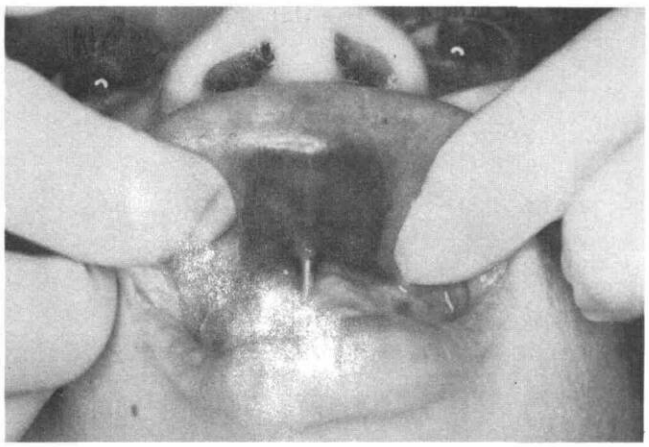

Figure 2. An intraoral photograph showing a well defined area of ecchymosis, and two areas of abrasion.

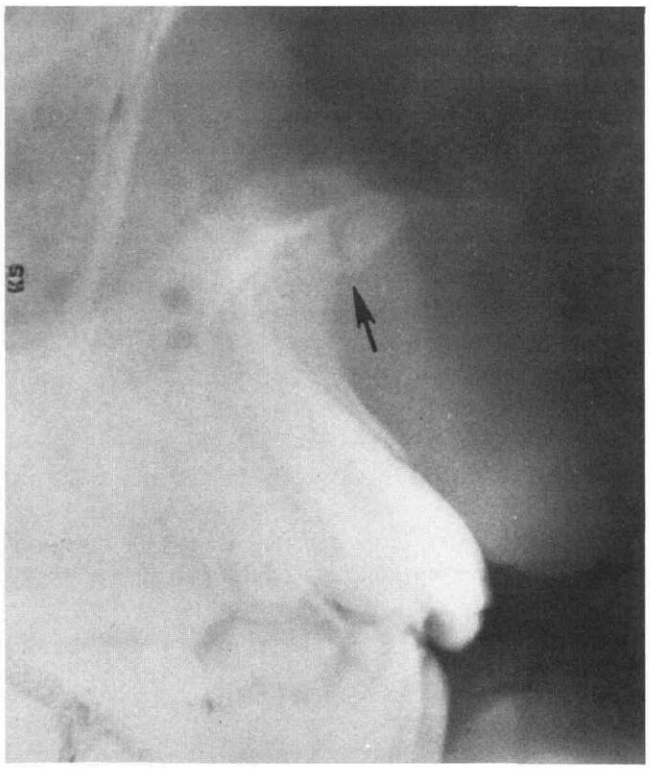

Figure 3. A lateral extraoral occlusal radiographic view of the maxilla showing a non-displaced fracture of the anterior nasal spine.

Discussion

Facial injuries are quite common with the nasal bone being the most frequently fractured.[3] The rarity of anterior nasal spine fractures can best be explained on an anatomical basis. The protrusive position of the nasal bone, the nasal cartilage, the malar bones, the mandible, the maxilla and maxillary teeth, seem to provide the anterior nasal spine with a significant degree of protection in the vast majority of traumatic injuries. In addition, because of its relatively smaller size, its centralized position among the more "prominent" and larger structures, the anterior nasal spine seems significantly less vulnerable to trauma than other midfacial structures.

Anterior nasal spine fractures may not be as rare as the literature indicates. Such fractures may be either ignored by patients, or may go undetected. Obviously, only suspicious symptoms usually necessitate more comprehensive or uncommon radiographic surveys. Diagnosis of anterior nasal spine fractures should be included in the differential diagnosis of all injuries involving the midface. Such a fracture should be suspected if tenderness, ecchymosis, abrasions, or lacerations exist in areas adjacent to the anterior nasal spine.

Appropriate radiographic examination may include intraoral and extraoral occlusal radiographs in addition to a lateral view of the skull. Dentists with access to cephalostats may utilize cephalometric films, otherwise a lateral extraoral occlusal film seems to be an adequate diagnostic tool, in the absence of any other midfacial suspicious signs. A lateral view of the skull as part of a more comprehensive evaluation, is probably most dependable.[2] Such a fracture, however, may

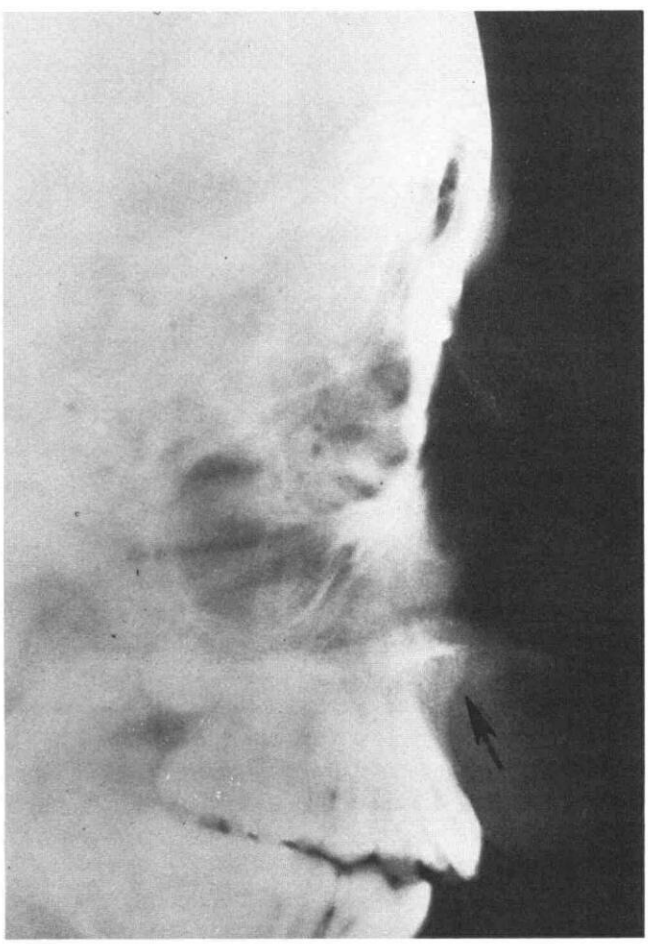

Figure 4. A lateral skull film showing a definite fracture of the anterior nasal spine.

be totally overlooked if diagnosis is based solely on Water's, posterior-anterior, submental-vertex or oblique views of the skull.

It is of interest to note that the two cases reported in the literature resulted from relatively minor accidents.

The role of other factors such as the degree of impact, types and shapes of objects involved in such accidents, the size and shape of the anterior nasal spine, and direction of trauma is speculative and remain to be evaluated but should be taken into consideration. It is of interest to note that this patient possessed a large anterior nasal spine.

The injuries sustained in this case can be reasonably explained by the description of the accident. Ecchymosis of the right supraorbital ridge, the base of the nose, the fractured anterior nasal spine, in addition to the two areas of abrasion, corresponded well with the history obtained from the child. In a continuous motion, the child apparently hit a pipe which slid across the prominent parts of his face from right to left, which explain the larger area of ecchymosis and the wider area of gingival abrasion on the right side (Figure 2).

Conclusions

Fractures of anterior nasal spine, although quite rare, are a distinct possibility in traumatic injuries of the midfacial region. Therefore it is recommended to include this type of fracture in the differential diagnosis of facial injuries. Treatment is usually symptomatic, but should include a limitation on the movements of the upper lip and the nasal cartilage for a period of two to four weeks.

Dr. Nazif is director, Dr. Ru[illegible]istant director, and Dr. Caudill is senior resident at the dental department, Children's Hospital of Pittsburgh. Requests for reprints should be sent to Dr. Nazif at Children's Hospital of Pittsburgh, 125 DeSoto Street, Pittsburgh, Pennsylvania, 15213.

References

1. Kruger, G. O.: *Textbook of Oral Surgery,* St. Louis: C. V. Mosby Co., 1974.
2. Most, D. S., et al.: "Fracture of the Anterior Nasal Spine," *J Am Dent Assoc,* 99:484, September, 1979.
3. Schultz, R. C.: *Facial Injuries,* Chicago: Year Book Medical Publishers, 1977.