



Nasal fractures: patient satisfaction following closed reduction

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Abstract

Aim Nasal fractures are commonly treated by primary closed reduction. However, studies suggest this produces unacceptable functional and aesthetic results. Many patients require revision surgery. We aimed to assess patient satisfaction following closed reduction of nasal fractures.

Methods Retrospective chart review of patients with nasal fractures treated by closed reduction at the Wellington Regional Plastic, Maxillofacial and Burns Unit, New Zealand over a 2-year period was undertaken. Digital manipulation under general anaesthetic was performed. Patients were followed-up by telephone with a structured interview.

Results Of 116 consecutive patients, 74 (65%) were successfully contacted. 65 (88%) were satisfied with functional outcome, and 64 (86%) with aesthetic outcome. Of the 34 patients reporting incomplete correction, 12 (35%) would consider revision surgery.

Conclusion Patients treated with closed reduction of nasal fracture performed under general anaesthetic with digital manipulation reported high levels of satisfaction with functional and aesthetic outcomes. Revision rate is low.

The nose is the central and dominant feature of the face and forms an important aesthetic unit.¹ The nasal bone is the most commonly fractured facial bone.² The force required to fracture the nose is less than that for any other facial bone.³ Even mild trauma can cause obstruction, discomfort and decreased olfaction.

Primary closed reduction is the mainstay of treatment for nasal fracture although unacceptable functional and aesthetic results have been reported.⁴⁻⁷ Poor results stem specifically from the failure to recognise septal fracture⁸ and the limited mobility of the nasal bones within the skin envelope.¹ This is generally compounded by lack of technical expertise and limited resources. Revision surgery occurs in up to 50% of patients.^{3,4,9}

A previous study from our unit compared the results of digital reduction of nasal fractures under general anaesthetic with instrumental technique under local anaesthetic.¹⁰ The current study evaluated patient satisfaction following closed reduction of nasal fractures and identified reasons for patient dissatisfaction.

Method

The charts of consecutive patients treated for nasal fracture in a tertiary referral centre between June 2004 and July 2006 were retrospectively reviewed. Children under 17 years of age and patients treated with other facial fractures were excluded.

Closed nasal reduction was performed under a brief general anaesthetic as a day procedure. Reduction of the nasal bones and septum was achieved by insertion of the little finger into the nares and countered by external digital manipulation using the opposite hand. No instrumentation was used and intranasal bleeding rarely occurred. A small moulded Plaster of Paris splint was applied over the dorsum of the nose for 5 days. The patients were routinely followed up by their General Practitioner.

Demographic data, mechanism of injury, airway obstruction and clinical deformity were noted subjectively and objectively. A telephone survey with a structured questionnaire was conducted. Patients were asked to determine if the function and appearance of their nose was worse or the same following closed reduction. They were asked to assess their overall satisfaction using a scale of 1 (very poor) to 10 (excellent). Patients who reported incomplete correction were asked whether they would consider revision surgery. Reasons for refusing revision were identified.

Results

161 consecutive patients who underwent closed nasal reduction were identified. 116 fulfilled inclusion criteria. 74 patients (65%) were successfully contacted for the telephone survey. Follow-up was carried out a minimum of 6 months after closed nasal reduction.

48 patients (65%) were men. Patients were aged 17–83 (average 22) years. Most fractured noses in men were the result of sports (20/48) and assault (19/48). Half of the fractures sustained through sports were from rugby. Other causes were cricket, basketball and soccer. Falls (12/26) were the dominant cause in women.

Patients presented to our unit on an average 4.3 (range 0–16) days following injury and were treated on average 1.2 (range 0–11) days later. 62 (84%) of patients received their operation on the same day as they were seen in clinic.

65 (88%) patients were satisfied with functional outcome and 64 (86%) were satisfied with the aesthetic outcome of their procedure.

Of the 34 patients (46%) with incomplete correction, 12/34 (35%) would consider revision surgery. One patient (3%) had already had revision.

Two principle reasons for declining surgical revision were identified by patients. There was a lack of confidence in consequent improvement, and a reluctance to tolerate the subsequent rehabilitation time. No patients refused revision because of the risk of surgery itself.

Discussion

Closed reduction of nasal fractures is the accepted treatment in most Otolaryngology and Plastic Surgery Units as most Clinicians attempt to balance good long-term results with minimally invasive methods of reduction.¹¹ However, acceptable results are not universal in the literature, with as few as 50% of patients confirming satisfactory results in some studies.^{4,6,8,12} Many patients seek revision.

38% of patients in our study presented exclusively with aesthetic concerns, about three times as many as those with purely functional concerns. This reflects Fernandes¹ observation that the aesthetic component of nasal bone fracture is a stronger incentive to seek medical attention. It is difficult to assess whether nasal fractures cause more aesthetic than functional complaints or whether functional deformity is better tolerated. Likewise, Hung et al¹³ report that pre-existing nasal symptoms not related to the fracture can adversely hamper the patient's perception of a good outcome.

Early studies indicate that prompt manipulation increases the likelihood of acceptable results¹⁴⁻¹⁷ and should be performed when the swelling resolves at 3–10 days of injury.¹⁸ In this study, closed reduction was carried out on average 5.5 days following injury. Most patients received their surgery on the same day that they were seen in clinic.

Digital manipulation of nasal bone fractures is not a commonly used technique, but has the advantage of minimising mucosal damage and nasal haemorrhage due to instrumentation.¹⁹ Satisfactory outcomes have been reported with this technique,^{10,19} but there will be some patients in whom a complete reduction is unable to be achieved.

The issue of reporting of poor results is complex and has not been adequately dealt with in the literature. It appears that patients tolerate poor functional and aesthetic outcomes, describing these as “worse, but satisfactory”. In this and other studies a significant number of patients with poor results refused revision. This may reflect an unwillingness to undergo a second general anesthetic,^{1,13} and is the basis for the suggestion that patients be offered primary septorhinoplasty in the first instance,¹ especially where septal deformity is recognised pre-reduction.

Most patients in our study refused revision. None declined because of the risk of anaesthetic. They cited a lack of confidence in consequent improvement, and a reluctance to tolerate the rehabilitation time.

Patients were contacted at least 6 months postoperatively and this may impact on patients’ reporting of outcomes. It is generally accepted that the result of treatment cannot be evaluated until one or 2 years after treatment, since trauma as well as the consequent surgery may lead to secondary deformity.²⁰ Longer follow-up of our patients would give more accurate results.

Functional and aesthetic results of primary closed reduction of adult nasal fractures using digital manipulation under GA are satisfactory and lead to a low revision rate.

Competing interests: None

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