Journal of Taibah University Medical Sciences (2017) 12(4), 324–328

Taibah University

Journal of Taibah University Medical Sciences

www.sciencedirect.com

Original Article

Management of midline nasal dermoid lesions in children by external rhinoplasty

Naeem Makhdoom, M.D. [a], Tamer A. Abo El Ezz, M.D. [b] and Mohamed Abdel-Haleem, M.D. [a,*]

[a] *ENT Department, Taibah University, Almadinah Almunawwarah, KSA*
[b] *ENT Department, Ain Shams University, Cairo, Egypt*

Received 6 December 2016; revised 3 February 2017; accepted 6 February 2017; Available online 31 March 2017

الملخص

أهداف البحث: الأكياس الجلدية الأنفية هي عيوب خلقية نادرة تنشأ من الأدمة والأرومية المتوسطة. ويتم علاجها بالاستئصال الجراحي الكامل وهناك دعوات للعديد من الشقوق الجراحية. نعرض خبرتنا في استخدام نهج تجميل الأنف الخارجي لسبعة أطفال لديهم الأكياس الجلدية الأنفية والنواسير.

طرق البحث: تمت الدراسة بأسلوب استشرافي ل ٧ حالات لديهم أكياس جلدية أنفية ونواسير، تم تشخيصها سريريا وإشعاعيا، تم علاجهم بنجاح بواسطة نهج تجميل الأنف الخارجي في اثنين من المستشفيات التعليمية خلال الفترة من أبريل ٢٠١١م إلى نوفمبر ٢٠١٣م. بعد الجراحة، كان متوسط متابعتهم سريريا لمدة ١٢ شهرا وملاحظتهم بالفحص السريري وتم توثيق النتائج وتحليلها.

النتائج: تم علاج سبعة أطفال لديهم أكياس جلدية أنفية و/أو ناسور بالاستئصال الجراحي بنجاح من خلال نهج تجميل الأنف الخارجي؛ ٥ فتيات (٧١٪) وولدين (٢٩٪) من الفئة العمرية ١.٥ عاما إلى ١٦ عاما. وشمل الكشف السريري تورم خط الوسط في الوجه في خمس حالات، وناسور في خط الوسط في حالة واحدة وهوة ظاهرة في خط الوسط الأنفي عند مريض واحد. لم يكن هناك امتدادات تابعة للأكياس في هذه السبع حالات. تم تحقيق الاستئصال الكامل في ٦ حالات، بينما كان هناك ظهور جديد بعد ٦ أشهر في حالة واحدة مع استئصال كامل ناجح ومراجعة نهج تجميل الأنف الخارجي. كما تم متابعة جميع المرضى تقريبا لمدة عام بعد الجراحة.

الاستنتاجات: يعتبر نهج تجميل الأنف الخارجي نهجا جراحيا فاعلا لعلاج الأكياس الجلدية الأنفية والناسور للأطفال مع معدل منخفض جدا للظهور مجددا.

الكلمات المفتاحية: أطفال؛ كيس؛ جلدى؛ خط الوسط؛ أنفى

Abstract

Objectives: Nasal dermoid cysts are rare congenital lesions of ectodermal and mesodermal origin. Treatment of these cysts entails complete surgical excision, and several surgical incisions have been advocated. We present our experience utilizing an external rhinoplasty approach in seven children with nasal dermoid cysts and fistulae.

Methods: A prospective study of 7 cases of nasal dermoid cysts and sinuses, diagnosed clinically and radiologically, were successfully treated by an external rhinoplasty approach in two teaching hospitals during the period of Apr 2011 to Nov 2013. Post operatively, an average follow-up of 12 months was observed by clinical examination, and the outcomes were documented and analysed.

Results: Seven children, 5 girls (71%) and 2 boys (29%), with ages ranging from 1.5 years to 16 years, who had nasal dermoid cysts and/or sinuses were successfully excised via an external rhinoplasty approach. The clinical presentation included midline facial swelling in five patients, a midline sinus in one patient and a dorsal midline nasal pit in one patient. No accessory tracts were found in these seven cases. Complete excision was achieved in 6 patients. There was one recurrence after 6 months with a successful complete resection with revision external rhinoplasty. All patients were followed up for an average of one year post operatively.

Conclusion: The external rhinoplasty approach is an effective surgical approach in treating paediatric nasal dermoid cysts and sinuses with a very low incidence of recurrence.

* Corresponding address: ENT Department, Taibah University, P.O. Box: 344, 41411 Almadinah Almunawwarah, KSA.
E-mail: dr.haleem65@gmail.com (M. Abdel-Haleem)

Peer review under responsibility of Taibah University.

Production and hosting by Elsevier

 http://dx.doi.org/10.1016/j.jtumed.2017.02.003

Keywords: Children; Cyst; Dermoid; Midline; Nasal

Introduction

Nasal dermoid cysts are rare congenital lesions of ectodermal and mesodermal origin.[1] The majority of nasal dermoid cysts are reported in children. Most of the lesions present as dermal sinuses or cysts in the midline of the nasal dorsum.[2] Many other cases have presented with skin defects located anywhere from the glabella to the base of the columella.[2] A tract can exist from the nasal dorsum to the anterior cranial fossa.[3]

Histologically, dermoid cysts or sinuses are composed of a fibrous capsule of squamous epithelium and contain adnexal structures as hair follicles, sebaceous glands and sweat glands.[4]

These lesions are most frequently present in children but have also been reported in adults and sometimes extend intracranially.[5] The incidence of nasal dermoid cysts in children is 1 in 20,000−40,000 live births.[6] Many authors have reported that up to 12% of midline nasal dermoid cysts extend to the skull base and cribriform plate.[6] The presentation of midline nasal cysts varies in complexity, from a short, blind dermal sac to a complex, multiloculated lesion with a potential intracranial extension.[3]

The accepted treatment is complete surgical excision. Meticulous surgical planning is a must to avoid unexpected surgical situations. The nasal location of the lesions and probable involvement of deeper structures together with the possibility of an intracranial extension necessitate full clinical and radiological assessments before excision to prevent complications and local recurrence. A simple subcutaneous lesion, such as an epidermoid cyst, can present a challenge when located at the nasal tip or dorsum as regards aesthetic surgical management. When performed parallel to relaxed skin tension lines, a direct transcutaneous incision (commonly used for epidermoid cyst removal anywhere else) can distort the nasal tip subunit, resulting in a disfiguring scar. This should be avoided, especially in children. Careful pre-operative planning is essential to achieve optimal aesthetics.[3] If radiology shows an intracranial extension, then a combined (intracranial and transnasal) approach is mandatory.[7–9]

Many different surgical incisions have been advocated for the transnasal approach to completely excise a nasal dermoid. Pollock[7] advised the fulfilment of four criteria in any surgical approach to such lesions: it allows access to the cyst and permits osteotomies, enables repair of cribriform plate defects and other complications, aids in reconstruction of the nasal dorsum, and ensures an acceptable scar. This prospective study of seven paediatric cases (less than 16 years of age) with nasal dermoid sinuses or cysts included their radiological investigations, surgical approach and outcome. We present our experience in utilizing an external rhinoplasty approach in seven children with nasal dermoid cysts and fistulae, which allowed wide access with little visible scarring.

Materials and Methods

A prospective intervention study was performed by collecting data from seven patients aged 1.5 years to 16 years, with a mean of 6.3 years, who had congenital nasal dermoid cysts and underwent surgical excision using an open rhinoplasty approach during the period from April 2011 to November 2013 in two teaching hospitals. The study was conducted at Ain Shams University Hospitals Cairo, Egypt, and Ohud teaching hospital Almadinah Almunawwarah, KSA. Following institutional review board approval, the nature of the procedure was explained to the legal representatives of the patients, and informed consent was signed before the operations. All cases were successfully managed by complete excision via an external rhinoplasty approach.

The seven cases were all child patients diagnosed and surgically intervened by the authors during the research study. The diagnosis of congenital nasal dermoid cyst depended on clinical presentations (Figure 1) matching with congenital nasal desmoids and CT scanning. MRI was performed for the patient with bifid crista galli. Diagnosis was confirmed according to a tissue pathology examination for all cases postoperatively. The patients were presented to our O. P. clinics with a history of slowly progressive nasal swelling dating since early childhood or a discharging sinus on the dorsum of the nose for months or years. The discharge was always scanty and odourless.

A full otorhinolaryngological examination together with ophthalmological and neurological examinations were performed for each case. Office endoscopy (1.9°) using a nasal endoscope was conducted without local anaesthesia to exclude any associated intranasal lesions. This clinical diagnosis was confirmed by high resolution thin-cut spiral CT scans (Figure 2) of their facial bones and paranasal sinuses, which showed the characteristic soft tissue swelling over the nasal dorsum, occasionally separating nasal bones and, in one patient (female, 16 years), extending up to the anterior cranial fossa separating the crista galli into two.

MRI was performed for the patient with bifid crista galli to exclude intracranial extension and revealed no involvement of the anterior cranial fossa by the lesion with intact dura. After confirming the diagnosis radiologically, all of our patients were scheduled for elective open rhinoplasty to excise the lesion and reconstruct the resulting defect in one session.

Operative technique

An external rhinoplasty incision (Figure 3) is used with an inverted (V) columellar incision. The elevation of the skin and subcutaneous tissues covers the lower lateral and upper lateral cartilages and nasal bones. Gentle dissection of the dorsal nasal skin is carried out, especially over a distended cyst, to not break the skin integrity, which would cause an unpleasant scar after healing. A small transverse ellipse of the skin around the sinus opening is made, leaving the fibrous tract attached to the cyst cavity, while dissecting the tract without opening it until the nasal