

Congenital cervical fistulae: optimum age to avoid complication and recurrence.

K. A. Hassanen, O. A. EL-Tabary, A. A. Gafer, M. S. Allam

General Surgery Department Sohag University

Abstract

Objective of This retrospective study to evaluate the most important risk factor for recurrence and complication after cervical fistulae surgery.

Materials and Methods: a series of 41 cases treated for congenital fistulae of the neck between 2005 and 2012 in the Maxillofacial unit, pediatric surgery unit in general surgery department, Sohag University. The anomalies in this series were classified as laterocervical region, fistulas of the branchial cleft (n_31) followed by those of preauricular sinus and fistula (n_10). Revised for pre-operative presentation, operative procedure, post-operative short and long run follow up.

Results: This study includes 41 patients with diagnosis of cervical fistulae, including branchial, and preauricular sinus. 12 of them are males and 29 are female with age range between 6ms – 47 year old, mean = 14.3 ± 10.4 median = 13. 30 cases below age of 5 years (75%). Post-operative complication including: recurrence, infection, facial nerve palsy and seroma formation. Which mainly occurred in child below 1 year, preoperative history of recent infection or recurrent cases.

Conclusion: Age and presentation are the most affecting factor of post-operative morbidity or recurrence. As below age of 2 years most cases of recurrence or complication.

Introduction

Some congenital anomalies of the neck are common place in pediatric practice. This is the case for unilocular branchial cysts, and fistulas of the second cleft. However, less common lesions such as fistulas of the first cleft and cysts of the fourth pouch may pose problems of misdiagnosis and recurrence.

Awareness of the characteristic anatomic and clinical features of each lesion is

essential not only to allow accurate diagnosis but also to achieve complete surgical excision for recurrence free treatment (Nicollas et al 2003).

Congenital cervical cysts, sinuses, and fistulae must be considered in the diagnosis of head and neck masses in children and adults. These include, in descending order of frequency, branchial cleft anomalies, dermoid

cysts, and median cervical clefts. A thorough understanding of the embryology and anatomy of each of these lesions is necessary to provide accurate preoperative diagnosis and appropriate surgical therapy, which are essential to prevent recurrence (Stephanie et al 2007).

Branchial cleft abnormalities constitute about 30% of congenital neck masses. These lesions usually present in childhood or early adulthood, with equal sex predilection. (Ç Elsüreret al 2006) and (J. Zhang et al 2012).

Branchial apparatus abnormalities most commonly originate as remnants of the second branchial cleft/ pouch (C. Smith. 2006).

They can present as cysts, sinuses, or fistulas. Cystic abnormalities commonly present in late adolescence

and adulthood, with peak incidence in the third decade. Conversely, draining sinuses and fistulas present from birth to early childhood (Barrett et al 2013).

The experienced clinician will seldom require laboratory evaluation for the classic midline or lateral congenital lesions associated with branchial arch anomalies (Gosche et al 2006) and (Doğan et al 2012).

In asymptomatic cases, surgery is usually not indicated. In symptomatic cases, surgery is done to avoid the morbidity of recurrent infections and the cosmetic problem of draining sinus or fistula. Total surgical excision using a stepladder technique with 2 separate transverse incisions is recommended for a definitive cure. The operation is facilitated by the injection of methylene blue or by insertion of a thin catheter allowing the surgeon to accurately trace the fistulous tract (Ramnik Patel et al 2013).

Patients and methods

The Retrospective study was conducted in general surgery department, at Sohag university hospital from 2005 to 2012. And included cases presented with congenital fistulae of the neck and face that underwent operative management. Anatomically the lesions of our series were classified as sinuses and complete fistulae.

The record of these patients were examined to determine age, sex, age at discovery of the lesion, age of presentation, the type and side of the anomaly, age at the time of treatment, type of surgery, and follow-up which include recurrence, cosmetic,

RESULTS

This study includes 41 patients with diagnosis of cervical fistulae including branchial, and preauricular sinus. 12 of them are males and 29 are female with age range between 6ms – 47 year old, mean = 14.3 ± 10.4 median = 13, and 30 cases 75% were below age of 5 year old.

There are 27 patients (65.9 %) with history of opening, 13 patients (31.7%) with history of opening and discharge and 1 patient (2.4%) presented with swelling and opening.

complication, investigations were done e.g. fistulogram .

We evaluate our cases clinically as regard:

Local examination: to detect presentation (opening, discharge, associated swelling, others), site, side (unilateral or bilateral), previous scar, and signs of infection.

General examination: we search about signs of infection, associated health problem specially BOR and hearing loss.

Radiological: we evaluate our cases by fistulogram to insure our diagnosis, assist our design, and by abdominal U\S to exclude renal cysts in suspected BOR, hearing test done only in symptomatic cases only.

We include in our study cases who presented to our center in this study at Any Age, Cases which presented by opening and/ or discharge in face and cervical region Proved to be congenital. We Exclude. Acquired Fistula as Thyroglossal Fistula, Pure Facial Fistula as Parotid Fistula, Infected cases.

Follow up:

With great concern for follow up, we concentrate on detection of recurrence by reappear of symptoms (opening) or (discharge) (detection of other complications; seroma, infection, facial nerve palsy ...etc.

-Evaluation of postoperative cosmetic appearance and patient satisfaction.

All patients were consulted about the operations, written consent was taken from all patients, approval of scientific ethical committee obtained before start of the research.

Relation to facial nerve was reported in 8 case in which in 4 cases was deep and in the other was superficial in relation to the nerve, all cases which was reported was diagnosed as branchial fistula. All complicated Cases diagnosed as branchial fistula, complication distributed as 4 cases recurrence, 2 postoperative infection, 2 seroma formation and 1 case facial nerve palsy (which improved latter on)

Discussion

Study of the cervical region has shown that the midline and laterocervical regions are embryologically distinct. Development of the laterocervical regions depends on the branchial arches while that of the midline depends on proper closure of the embryo. This difference explains the distinction that must be made between malformations of the laterocervical region and malformations of the midline (Nicollas et al 2003).

Also there is correlation between the age and the prevalence of the cases. The prevalence of cervical fistula at birth is assumed to be zero. The occurrence starts to rise after 6 months, and reaches a maximum at about 6 years of age. The prevalence then decreases, with a small elevation at about 13 years. From the age of 30, cervical fistula is relatively rare. Exposure to infections is thought to be related to this typical age structure.

A relation between the age and incidence of post-operative complication as 77.7% of complicated cases below age of 10 year old. that may be due to small tracts and small neck and anatomical landmarks, this result agree with results from other authors as (Madana et al 2011) and (Nicollas et al. 2003) who mentioned that Post-operative complications are more common in children younger than eight years of age.

cases of recurrent cases were presented as recurrent post operative cases which

operated outside our center. This almost due to fibrosis and distorted anatomy of recurrent cases, wide and difficult dissection. With significant, with agreement with (Barrett et al 2013)

Conclusion

Excellent outcomes can be expected when the surgical principles of complete excision occurs during a time when there is no inflammation or infection. Generally, the elder the patient, the more successful the excision and improved cosmetic results. Preoperative antibiotics are helpful especially when excising fistulas because many of the wounds are contaminated with oral flora or skin organisms. If the incision is placed in a skin crease, the wound heals almost without trace.

Congenital neck fistula can be classified into midline or lateral. Congenital anomalies require a thorough understanding of the anatomic and embryologic origins for complete excision without recurrence or nerve injury.

Previously infected lesions require antibiotics. Ample time should be given for the infection to settle down before definitive surgery. In general, excellent results can be achieved for almost all excisions of congenital neck fistula.

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Conflicts of interest

There are no conflicts of interest.

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