CHOANAL ARTRESIA

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Introduction

Choanal artresia is an uncommon congenital abnormality of the nose with an incidence of approximately 1 in 60,000 live births [1]. Unilateral choanal artresias make up 60% of the cases. Bilateral artresias present with acute respiratory distress in the neonate whereas unilateral choanal artresias often remain undetected, as they do not present with life threatening symptoms. Both may be associated with other anomalies like congenital heart disease, external ear malformation, colobomata of eyelid or iris, gonadal hypoplasia, mental retardation, and cleft palate [2]. One such case is reported because of its rarity.

Case Report

An 18 year old female patient was admitted to Command Hospital (Northern Command) on 23 Nov 98 with history of left sided nasal block since childhood with associated left sided headache. There was no history of epistaxis, anosmia, or nasal discharge. There was past history of undergoing investigations for problems of vision at another medical center, details of that were not available.

General physical examination revealed a thin built girl with poor physical development. Height was 144 cms and weight 29 kg (Ideal weight 41 kg; 29% underweight). She had mild pectus excavatum and forward stoop.

ENT examination : Anterior rhinoscopy of nose revealed a DNS left, with discharge left nasal cavity with no air blast on left side. Posterior rhinoscopy showed posterior choanal artresia on left side. A catheter could not be passed beyond the left choana. Throat examination showed crowding of teeth with high arched palate. Ear examination showed that both pinnae were protruberant. The tympanic membranes were intact and mobile with normal hearing both ears. Ocular examination revealed a visual acuity of 3/60 in right eye and hand movements in left eye. Neuro-ophthalmic examination showed microphthalmus both eyes with microcorneas, concomitant convergent squint 45° in left eye, typical total coloboma of left eye (Fig 1) and horizontal nystagmus in both eyes. Systemic examination was within normal limits. Psychiatric evaluation showed her to have mental retardation with a mental age of nine years. Hemogram, urinalysis and electrocardiogram revealed no abnormality. Radiology with contrast studies confirmed the presence of choanal artresia on the left side (Fig 2). Pure tone audiometry showed normal hearing both ears. Echo-

cardiogram showed a normal study except for a patent foramen ovale.

On 25 Nov 98 a standard septoplasty with opening of left choanal artresia was done under general anesthesia. The choanal artresia was found to be bony hard and was opened using a Kocher's perforator by transnasal route and dilatation done using Hegar's dilators upto size 12/14. Patency of the choana was maintained by keeping a size '6' endotracheal tube in both choanae and fixed anteriorly to the sptum. During the post-operative period, she was kept on antibiotics and nasal decongestants. The endotracheal tube was removed on 17th post operative day. Following the removal of the tube she was discharged from the hospital on 14 Dec 98. She was advised to continue dilatation of the choana at home using Hegar's dilators size 12/14 for four weeks, and reviewed as OPD case. During the last review in Jun 99 the choana was found to be patent with a good airway.

Discussion

Roederer first described choanal artresia in 1775[3]. It is more common in females with a ratio of 2:1[1]. Cases with both anterior and posterior choanal artresias have been described [4]. Ninety percent of the artresias

Fig. 1 : Total Coloboma of left eye

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Fig. 2: Choanography with contrast medium showing choanal atresia left

are bony and ten percent membranous. Few authors have mentioned a familial incidence. Sixty percent of choanal atresia are associated with one or more supplementary congenital anomalies [5]. Recent observation have associated choanal atresia with specific anomalies, the CHARGE association [2] consisting of : Colobomatous blindness, Heart disease, Atresia of choana, Retarded growth including CNS, Genital hypoplasia in males, Ear deformities including deafness.

Our patient had four out of five components of the CHARGE association that can occur in females. She also had asymmetry of facial skeleton, which is common with choanal atresia[1].

Choanal atresia occurs when the ectodermal olfactory pits fails to extend backward upto the nasopharynx in intra-uterine life. Changes in cell morphology of nasal ciliated columnar mucous membrane such as unevenness of mucosal surface, thickening of basal membrane and abnormalities of cilia have been

described[6].

Diagnosis of choanal atresia is based on clinical findings and confirmed by choanogram. Computed tomography scan can indicate whether the atresia is bony or membranous [7] but was not carried out in this case.

Carbon dioxide lasers are generally now being used to correct atresias. The various surgical approaches include transnasal, transpalatal and transantral. Bony atresias are usually approached by a transpalatal route. In our case we have operated by a transnasal route in a bony atresia since it is a simpler procedure and also avoids the complication of palatal fistula that may occur especially in patients with high arched palate which was present in our patient. We treated our patient by transnasal perforation and dilatation. Stenting of choana with portex endotracheal tubes, Foley's catheter or silastic tube is necessary after surgery to keep it patent [8].

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