

## UNILATERAL CHOANAL ATRESIA IN ADULTS

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### ABSTRACT

Choanal atresia usually is a congenital anomaly; it can be unilateral or bilateral. Bilateral choanal atresia is always diagnosed in newborn infants. But unilateral choanal atresia sometimes missed and symptoms appear later. In a six years period eleven patients were referred to our clinic with unilateral nasal discharge, snoring and nasal blockage. No history of trauma and no complaints were there which could clearly point to the diagnosis. On investigation (nasal catheterization, choanography and CT scan), unilateral choanal atresia was seen on one side and semi stenosis on other side was seen. Seven female and four male (ages ranges from 11-15 years). Three of them underwent Transpalatal approaches (William incision) and eight endoscopic transnasal techniques. All have done well with follow up ranging from 9 months to 6 years and no complication. Otorhinolaryngologist should be alert to the diagnosis, particularly in patients with a unilateral nasal discharge and unilateral nasal blockage in adults.

**KEY WORD:** Choanal atresia, Congenital anomaly, Endoscopic repair.

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### INTRODUCTION

Congenital Choanal Atresia (CCA), is an obstruction between the nasal cavity and nasopharyngeal vault resulting in continuous nasal discharge, impaired sense of smell and restricted nasal ventilation.<sup>1</sup>

Atresia of the choanal was first described by Roederer in 1755.<sup>2</sup> This congenital anomaly is an uncommon malformation. The incidence of this entity is reported as approximately one in 7000 to 8000 births.<sup>2</sup> It's true incidence may be

greater owing to missed diagnosis in still birth, unilateral presentation and incomplete obstruction (choanal stenosis).<sup>3</sup>

Choanal atresia is twice as likely to be unilateral and right sided. The atresia may be complete or incomplete and membranous, cartilaginous or bony (approximately 90%).<sup>4</sup> In the five years 11 adult patients were referred to our clinic with unilateral nasal discharge, snoring and nasal blockage. Bilateral choanal atresia is always diagnosed in new born infants, but unilateral choanal atresia is sometimes missed and symptoms appear later. The purpose of this study was to inform that sometimes in adult patients unilateral discharge or blockage may be related to undiagnosed Choanal atresia.

### METHODOLOGY

This is a review of our personal series of 11 adult patients referred to our clinic with unilateral nasal discharge, snoring and nasal block-

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Fig-1: The choanography show stagnation of opacity material in the right nasal cavity. The left nose show a normal appearance.

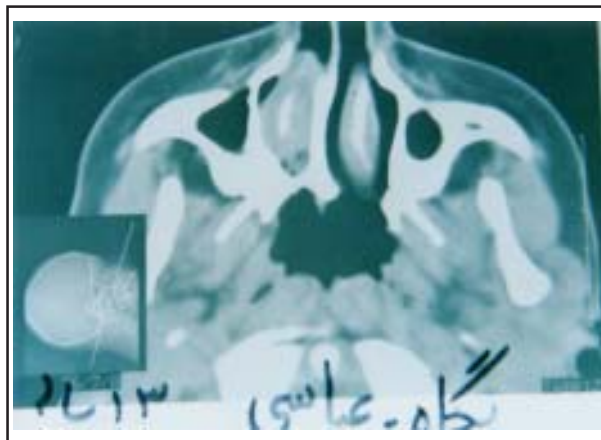


Fig-2: The CT Scan showing bony choanal atresia in right side

age. Anterior and posterior rhinoscopy, nasal catheterization, choanography (Fig-1) and C T Scan were done (Fig-2,3), and unilateral choanal atresia was seen in all patients. Three of the patients underwent traspalatal approaches with William incision (Fig-4) and eight endoscopic transnasal techniques. In first three cases we did not have endoscopic instruments. For this reason we choose transpalatal William technique and atretic bony partition was removed with drill and patency established. In the remainder of the patient’s under direct vision of 0° and 30° nasal endoscope atretic portions were removed with cut forceps and a fairly wide patent nostril was created.

**RESULTS**

During six years period 11 patients with unilateral choanal atresia were referred to our clinic, three of them underwent transpalatal approaches and eight endoscopic transnasal techniques. The diagnoses in four patients were membranous atresia and seven were o mixed type.

Seven of them were female and four male (Ages ranges from 11-15 years). In seven patients atresia was on right side and semistenosis in other side, by petrygoid protrusion and thick vomer, and in four of them atresia was seen on left side. There were no complications during surgery. The day after surgery the nose was open without any blockage, discharge and snoring. During periodic follow up examinations by



Fig-3: The CT scan demonstrating unilateral mixed chonal atresia (membranous and bony)

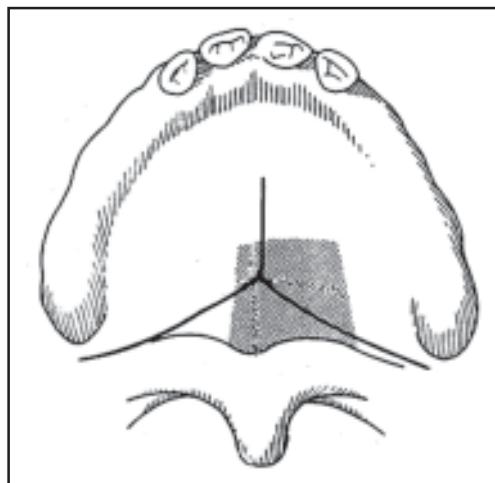


Fig-4: The technique of the William incision for tanspalatl repair of choanal atresia

nasoendoscopy all patients showed adequate patency with no complaints.

## DISCUSSION

Atresia of the nasal passages can be acquired or congenital, and may involve either the anterior or posterior apertures. Congenital anterior atresia is seldom seen, but acquired anterior atresia is usually due to destruction of the normal cartilage and skin by burns, war wounds, car accident, lupus and syphilis.

Posterior acquired atresia is usually due to trauma, war injury, syphilis, tuberculosis, diphtheria, after uvulo-pharyngo-palato plasty (U.P. P. P). Congenital atresia of the posterior apertures of the nasal passages is due to failure of the buccopharyngeal membrane to become absorbed in the developing fetus. Normally this membrane begins to disappear at about the 27<sup>th</sup> days of fetal development.<sup>5</sup> After the newborn baby has taken its first breath, and the cord has been severed, the medical attendant or midwife should be taught how to examine the infant for any possible congenital defect. Some congenital atresia are immediately self evident, as bilateral choanal atresia, but sometimes in bilateral atresia many infants survive despite this obstruction. Lord and Polson (1943) describe 46 cases of bilateral congenital atresia of this type, in adults.<sup>6</sup> In our study all patients had evidence of persisting nasal obstruction, which will not respond to cleaning, suction or ephedrine drops. Such patients must be suspected to have unilateral choanal atresia. By passing through plastic catheter until this reaches obstruction, preventing its entrance into pharynx. Then choanography and C T Scan in the axial view will direct to diagnosis. In the first case we did not have CT scan, the choanography revealed choanal atresia (Fig-1), but in the other patients we did CT scan (Fig-2,3). CT scan is the best that will adequately evaluate the choanal atresia before and after surgery.<sup>7</sup> Friedman N.R

has reported maximum success and better outcome by endoscopic correction of choanal atresia.<sup>8</sup>

There are four basic approaches to the correction of choanal atresia, transantral, transeptal, transnasal, and transpalatal. All of our patients were adults, for this reason in three of them we used transpalatal approaches with William incision (Fig-4) and eight endoscopic transnasal techniques. In long time follow up (9 months to 6 year) we had no problems and patients are doing well.

## CONCLUSION

This emphasizes the need for otolaryngology surgeons to be alert to the diagnosis, particularly in patients with a unilateral nasal discharge and unilateral nasal blockage in adults. Unilateral choanal atresia is a rare malformation in adult that can be successfully treated with transnasal endoscopic resection or transpalatal approaches.

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