# Prevalence of early complications of partial inferior turbinectomy

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ألملخص تمهيد: ضخامة القرينات الأنفية سبب مهم لانسداد الأنف وفي كثير من الاحيان لا يمكن معالجته بالعقاقير الموضعية أو الجهازية وفي هذه الحالة تصبح الجراحة هي الحل الأمثل. ألهدف: لدراسة نسبة حدوث المضاعفات المبكرة (للسنتين الأوليتين) بعد أجراء الاستئصال الجزئي للقرينات السفلية. طريقة الدراسة: ٢٤ مريضا تم تشخيصهم سريريا بضخامة القرينات السفلية المزمن لدى مراجعتهم مستشفى الديوانية التعليمي وعيادتي الخاصة ما بين شهر أيار ٢٠٠٦ وشهر تموز ٢٠٠٨. كافة الحالات المشخصة بغض النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إحراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية لها. النظر عن السبب تم إحراء استئصال القرينات السفلية لها. النظر عن السبب تم إجراء استئصال القرينات السفلية، كان هناك مريضا واحدا تعرض إلى ورف بعد الجراحة، ٣١ مريضا حدثت لهم قشور و شعروا بحفاف الأنف والذي تحسن مع الوقت وستة مرضى حدثت لهم التصاقات تم تحرير ها خلال الأسبو عين الأوليين بعد الجراحة، ٣ مرضى لاحظوا مفرزات خلف الأنف. لم تسجل حالات ضمور للأغشية المخاطية أو مفرزات كريهة من الأنف. ألاستتاجات: الاستئصال الجزئي للقرينات السفلية عملية جراحية مقبولة لمعالجة انسداد الأنف المزمن في حالة مشل العلاج الدوائي المحافظ واستخدام الطريقة المناسبة والمتابعة الجيدة يجعلها أكثر أمنا. مفتاح الكلمات: السداد الأنف، ضخامة القرينات السفلية، الاستنصال الجزئي لقرينات السفلية. الموالين ألمن ألمان

#### **Abstract**

**Background:** Chronic hypertrophic rhinitis is an important cause of nasal obstruction & in many times cannot be relieved by medical treatment, & in this case, surgery is considered as the best option.

**Objective:** To study the prevalence of early complications (the first two years) following partial inferior turbinectomy.

**Methods:** 64 patients were clinically diagnosed with chronic hypertrophic rhinitis consulting us in Diwaniyah teaching hospital & my private clinic during the period between April 2006 & July 2008. All the cases of chronic hypertrophic rhinitis regardless of the cause submitted for partial inferior turbinectomy.

**Results:** Out of total of 64 patients who underwent inferior partial turbinectomy; only one patient (1.56%) experienced postoperative hemorrhage, 31(48%) patients experienced crusting & dryness of the nose that improved with time, 3 patients (4.68%) had noticed a postnasal discharge & only 6 patients (9%) experienced synechiae in the first two weeks. No cases of atrophic rhinitis or foul nasal discharge had been detected.

**Conclusions:** Partial removal of the inferior turbinate is an accepted surgical procedure for the relief of chronic nasal obstruction in case of failure of conservative treatment & using the appropriate technique can make it safer.

Key words: Nasal obstruction, chronic hypertrophic rhinitis, inferior turbinectomy.

#### **Introduction**

The inferior turbinate (concha) is the largest & broadest of the three turbinates. It is covered with mucous membrane that contains large vascular spaces, erectile tissue that controls the caliber of the nasal cavity. It can swell & block the nose rapidly <sup>(1)</sup>.

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The turbinates undergo cyclical increases & decreases in their size as part of the nasal cycle. Both allergic & non-allergic (intrinsic, vasomotor) rhinitis can lead to pathological, persistent increase in turbinate size. This often causes a marked restriction in airflow through the valve region with a concomitant sensation of severe nasal blockage  $^{(2)}$ .

One of the commonest conditions leading to nasal obstruction is the enlarged inferior turbinates. This condition not only affects man but also dogs, cats & horses. Enlargement of the inferior turbinates is almost always due to swelling of the submucosa & only rarely due to enlargement of the bone itself <sup>(3)</sup>.

Allergy, rhinitis & other inflammatory diseases can cause inflammation & edema of the nasal mucosa & turbinates, particularly the inferior turbinate  $^{(4)}$ .

Nasal obstruction poses a major problem for the patient & the surgeon, no definite mode of treatment has evolved till now & failure of medical treatments will route to surgical procedures <sup>(5)</sup>. There are numerous surgical procedures described for the management of enlarged turbinates, including submucous resection, cautery, laser, cryosurgery, & simple resection <sup>(2, 5, 6, 7, 8, 9, 10, 11)</sup>

Removal of the anteroinferior portion is probably as effective as total resection unless large posterior "mulberry" hypertrophy exists <sup>(4)</sup>. For a long time, the postoperative complications of turbinectomy had been evaluated by many studies in order to reduce these complications & in many times there were controversy regarding the procedures or the way of management of complications, like an excision of the anterior end of the inferior turbinate offers the advantage of lower incidence of hemorrhage <sup>(12)</sup> or the use of nasal

splints will decrease the incidence of synechiae<sup>(13)</sup>, however, inferior turbinectomy is considered as an important procedure to treat nasal obstruction after failure of medical treatment in spite of all complications.

#### Patients & methods

The study was conducted in Diwaniyah teaching hospital, ENT-Department & my private clinic. 64 patients were clinically diagnosed with chronic enlargement of inferior turbinates regardless of the cause during the period between April 2006 & July 2008. Age of the patients ranged between 15-45 years old. 24 patients of the total number were females while 40 cases were males.

The reviewed data in the questionnaire were age, sex, residence, bleeding, crusting, synechiae, dryness of the nose, foul nasal discharge, constant postnasal discharge & atrophic rhinitis.

All the cases of hypertrophy of the inferior turbinates regardless of the cause & whether associated with septal deviation or not or chronic rhinosinusitis submitted for partial inferior turbinectomy. Septoplasty or SMR (submucosal resection) had been done for thirty eight patients (59%) of the total number; unilateral inferior partial turbinectomy was done for sixteen patients (25%) out of total cases & a bilateral procedure for the rest of patients.

Angled turbinate scissors were used for this procedure; one blade was inserted beneath the inferior turbinate & the other on top of it after fracturing the turbinate medially. Resection includes the turbinate mucosa & bone. The extent of the resection depends upon the degree of hypertrophy. No nasal splints had been used for our patients. Anterior nasal packing done by sofratulle gauze or gauze impregnated with gentamycin or fucidin ointment & left for two days.

#### **Results**

Age of the patients in our study ranged from 15-45 years old. The total numbers of the patients were 64 cases. 24 patients of the total numbers were females, while 40 cases were males. 18 (28%) cases were less than 20 years old, 35 cases (55%) were between 20-34 years old & 11 cases (17%) were above 35 years old as in table (1).

Range (yrs)	< 20	20-34	>35
Number	18	35	11
%	28	55	17

Table (1)	) distribution	of	natients	according	to age
Table (1)	) uisti ibution	<b>UI</b>	patients	accorung	to age

All the patients were followed for the first 14 days after surgery. Out of 64 patients who underwent surgery, we could follow up only 48 patients, while others did not revisit us for many causes.

One patient (1.56%) of the total number had complained of severe bleeding & controlled by another anterior nasal packing for further two days.

31 cases (48%) of the total number had crusting & feeling of dryness; crusts were adhesive & associated with mild bleeding after removal of these crusts, the feeling of dryness had improved with time in most cases.

6 patients (9%) out of the total number had developed synechiae in the first 2 weeks & these adhesions were between inferior turbinates & the septum especially in the patients who submitted for septoplasty or submucosal resection (SMR) at the same time & more in those who had exposed for tears or mucosal injuries at time of surgery. The adhesions were treated by releasing the synechiae & smearing the area with antibiotic ointment & following the patient every other day with frequent irrigation by normal saline.

3 cases of the total number (4.64%) had reported a postnasal discharge; one of them felt an improvement with time.

No cases of atrophic rhinitis or foul nasal discharge had been detected during the time of our follow-up as in table (2).

Complication	No. of pts. affected from total cases	Percentage
Bleeding	1	1.56%
Nasal crusting & dryness	31	48%
Postnasal discharge	3	4.68%
Synechiae	6	9%
Atrophic rhinitis	0	0%
Foul nasal discharge	0	0%

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#### **Discussion**

Partial removal of the inferior turbinate is an accepted surgical procedure for the relief of chronic nasal obstruction in case of failure of medical treatment. The beneficial effect of the operation is mainly mechanical by reduction of the resistance to nasal airflow <sup>(14)</sup>. Surgeons hesitate to use it for two reasons (1) partial turbinectomy is not physiologic (2) the procedure is not safe, but this might be true for the healthy people. We, instead, operated on patients with nasal obstruction due to chronic hypertrophic rhinitis (pathologic) with good results of vast majority & with accepted complications. Some authors have, however, condemned this practice because they believe that it results in a disturbance of nasal function due to turbulent airflow in an excessively enlarged nasal cavity <sup>(15)</sup>. Again this might be true for the total inferior turbinectomy rather than partial turbinectomy.

The three main complications that we had faced were bleeding, crusting & synechiae & these complications can be lowered if we use the appropriate methods in dealing with each one. Regarding bleeding, if we applied a good technique & avoiding operating on patients who are taking anticoagulants of any kind or smokers & with good packing can reduce this percentage even more. Crusting can be reduced by early cleaning with good nasal wash like using a normal saline & the early treatment of infections, while synechiae can be reduced by smooth work to avoid injury of the septum or doing tears or to put nasal splints.

Ozena (atrophic rhinitis) is a serious disease & can be encountered more in total inferior turbinectomy rather than partial inferior turbinectomy, even though, no cases detected in our study.

We concluded that partial turbinectomy is an effective & safe procedure & using the appropriate technique can make it safer.

In comparison with other studies, **John Mathai** (et al 2004), study reported that 8% of his patients (75 cases) submitted for partial inferior turbinectomy had developed dryness & crusting of the nose, 3% had synechiae, 3% developed bleeding & no ozaena or foul smell had been reported in his series. In study of **Rakover Y**. (et al 1996), had reported 2.6 % of bleeding & synechiae for each, <sup>(16)</sup> while **Moore** (et al 1985) had noticed 89% of cases with dryness & crusting & 39% of foul smell <sup>(17)</sup>. These results are near to the results of our study except for the study of **Moore**, where there were increase in dryness & crusting & also an increase in foul smell & this increase may be attributed to the nature of study where a total inferior turbinectomy done rather than partial inferior turbinectomy.

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