



CT PARANASAL SINUSES-AS A PREDICTOR OF POST-FESS SYMPTOM SCORES.TERTIARY HOSPITAL BASED STUDY

Otolaryngology

Dr Aftab Ahmad Rather

Dr Jasif Nisar* *Corresponding Author

Dr Arshed Ali

ABSTRACT

CT scanning of the paranasal sinuses has revolutionized the surgical management of rhinosinusitis, however, pre-operative paranasal CT has been considered a poor predictor of the management outcome. In this prospective study carried out on twenty seven patients at our institution, we found pre-operative CT scoring to be a reliable predictor of postoperative symptomatology.

KEYWORDS

Introduction:

Nasal polyposis (NP), consisting of multiple, bilateral nasal polyps, is considered as part of the spectrum of chronic rhinosinusitis.^{1,3} The etiology of NP is unknown. The prevalence ranges from about 2 %⁴ to 4%⁵. They predominantly affect adults and are uncommon in children under ten years of age. Sino-nasal polyposis occurs due to edematous transformation of the mucosal lining of the nose and the paranasal sinuses. The exact etiology is unknown but historically allergy and more recently genetic factors² have been associated with nasal polyposis. CT scanning of the paranasal sinuses has revolutionized the surgical management of rhinosinusitis, however, pre-operative paranasal CT has been considered a poor predictor of the management outcome.¹ Nasal polyposis is usually amenable to medical management with topical and systemic steroids,⁴ however, surgery with FESS⁵ (functional endoscopic sinus surgery) has been the mainstay of treatment for intractable disease. A pre-operative CT scan of the paranasal sinuses is always done to determine the bony framework of the paranasal sinuses and any anatomical anomalies and disease severity according to Lund and Mackay staging system⁶.

Materials and methods:

Our study was a prospective study that was carried out in the department of ENT and Head & Neck Surgery, Government Medical College, Srinagar from March 2015 to September 2016. A total of 27 patients were operated, among them 20 were males and 7 were females.

A pre-operative CT scan was done in every patient 2 weeks prior to the surgery and CT staging was carried out for each sinonasal cavity. Each side was staged separately. Post-operative symptom scoring was done after 8 weeks and 6 months of surgery using a visual analogue scale (VAS) from 0 to 10 cm (more the VAS score more severe the symptomatology). Postoperative symptoms (facial pain and nasal obstruction) were compared for each side separately with pre-operative Lund & Mackay CT scoring. Sino-nasal cavities on each side were divided into those with Lund & Mackay CT score of ≤8 (less severe involvement) and >8 (severe involvement).

Results:

1. Severity of nasal obstruction at 8 weeks post-operatively w.r.t the pre-operative CT scores:

Table 1 showing lund & mackay pre-operative CT-score wrt mean score on VAS at 8 weeks.

Pre-op L.M.(CT) score	No.of cases	Mean score on VAS
≤8	12	4.33 (2.44)
> 8	15	3.6 (1.24)

p=0.0198.

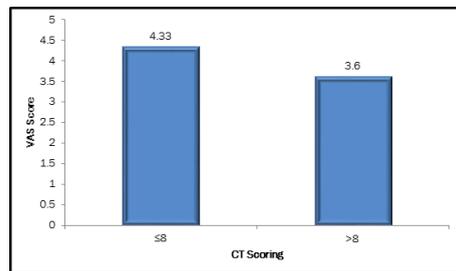


Fig.1. Graph demonstrating the severity of nasal obstruction w.r.t. the preoperative CT score at 8 weeks post operatively (VAS score along the vertical axis).

2. Severity of nasal obstruction at 6 months post-operatively w.r.t the pre-operative CT scores:

Table.2 shows the severity of nasal obstruction w.r.t. the preoperative CT score at 6 months post operatively.

Pre-op L.M. (CT) score	No. of cases	Mean score on VAS
≤8	12	3.33 (1.22)
> 8	15	4.33 (1.14)

p=0.039

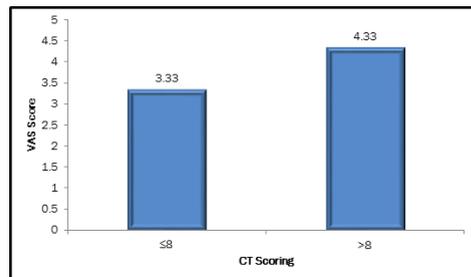


Fig.2. Graph demonstrating the severity of nasal obstruction w.r.t. the preoperative CT score at 6 months postoperatively (VAS score along the vertical axis).

3. Severity of facial pain at 8 weeks post-operatively w.r.t the pre-operative CT scores:

Table 3 shows Severity of facial pain at 8 weeks post-operatively w.r.t the pre-operative CT scores

Pre-op L.M. (CT) score	No. of cases	Mean score on VAS
≤8	12	2.08 (2.08)
> 8	15	2.53 (1.5)

p=0.249

The patients with less extensive disease (LM-CT score less than 8) had better results at 8 weeks postoperatively, although the results were insignificant.

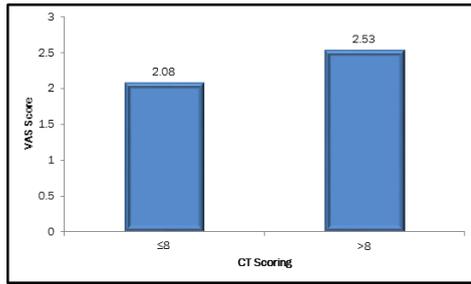


Fig.3. Graph comparing severity of facial pain w.r.t. the preoperative CT scoring at 8 weeks postoperatively (VAS scores along the vertical axis).

4. Severity of facial pain at 6 months w.r.t the pre-operative CT scores:

Table 4 shows Severity of facial pain at 6 months w.r.t the pre-operative CT scores

Pre-op L.M.(CT) score	No. of cases	Mean score on VAS
≤8	12	1.46 (1.67)
> 8	15	3.17 (1.75)

$p = 0.0161$

At 6 months again the patients with less extensive preoperative disease were symptomatically better and, the results were significant.

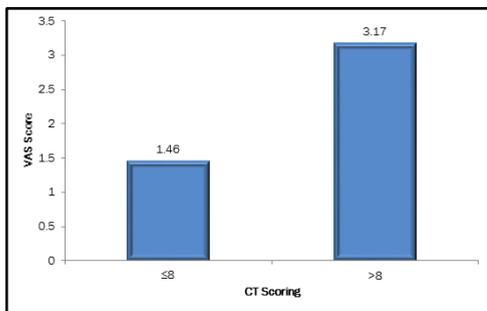


Fig.4. Graph comparing severity of facial pain at 6 months postoperatively w.r.t. the preoperative CT scoring (VAS scores along the vertical axis).

Discussion:

When the results for nasal obstruction were plotted against pre-operative CT score it was found that initially at 8 weeks postoperatively (table & Fig. 1) the results were in favour of higher pre-op CT scores(>8) for both the groups but paradoxically changed in favour of lower pre-op CT scores at 6 months post-operatively (table and Fig. 2) probably due to the inherent severity of the disease in the patients with higher pre-op CT scores. The results came out to be significant in both the instances.

Regarding facial pain , patients with low pre-op C.T. scores (≤8 , less severe sinus involvement) fared much better than those with higher pre-op C.T. scores (>8) at both eight weeks post-op (table & Fig.3) and six months post-op (table & Fig. 4).

Conclusion :

it can be concluded that patients with higher pre-operative CT scores have higher visual analogue scale scores postoperatively and might therefore warrant a more aggressive post-operative treatment regimn.

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