Compare nasal endoscopy with Computed Tomography scans for chronic rhinosinusitis detection in adult Iraqi patients

Ali lafta Salman [ID][1]

[1]Department of ENT, College of medicine ،university of Diyala, Iraq

Correspondence: **Ali lafta Salman**

Email: ali.lafta@uodiyala.edu.iq

Abstract

Background: Chronic rhinosinusitis (CRS) is often diagnosed based on clinical features. Assurance in this context is based on the finding of inflammatory features during nasal endoscopy and computed tomography (CT) scans of the paranasal sinuses. While a CT scan is considered the most reliable method, research has shown that nasal endoscopy is also valuable and can sometimes provide additional information to supplement the CT scan in diagnosing CRS.

Objective: The study goal was to demonstrate the comparative reliability of nasal endoscopy and computed tomography scans in diagnosing chronic rhinosinusitis in adult patients treated at Baqubah Teaching Hospital.

Patients and Methods: The study sample consisted of consecutive adult participants clinically diagnosed with chronic rhinosinusitis. Patients who had a computed tomography scan of the paranasal sinuses and a nasal endoscopy during three months were the subjects of this investigation; the outcomes were linked.

Results: Study results exhibit that the most prevalent symptoms seen in the study participants were nasal discharge and nasal obstruction, reported by 95% and 90%, respectively; the most prevailing observation during nasal endoscopy was middle meatus purulent discharge, noticed in 58% of the patients. Maxillary sinus was most often affected, seen in 65% of the patients on a CT scan, and 40% had obstruction of the osteomeatal complex on CT imaging. The nasal endoscopy had a sensitivity of 73.3%, specificity of 85.3%, positive predictive value of 92.7%, and negative predictive value of 55.8%. The research also found no significant differences in positive predictive value (PPV) between nasal endoscopy and CT scan. In contrast, the sensitivity of nasal endoscopy was significantly greater than that of CT scan.

Conclusion: The study found that nasal endoscopic findings for patients with positive clinical features were purulent (cream-colored) discharge and middle meatus polyps, which is sufficient for diagnosing chronic rhinosinusitis; the study showed that Nasal endoscopy is almost as accurate as CT scans and CT scan findings are well correlates with sinus endoscopy, due to its precision, cheap cost, and radiation dosage.

Keywords: chronic rhinosinusitis, nasal endoscopy, Computed Tomography Scan, Baqubah Teaching Hospital.

Diyala Journal of Medicine

Introduction

Chronic rhinosinusitis (CRS) is one of the most common chronic health conditions, and its incidence is increasing worldwide. CRS affects about 1 in 7 adults in the US population (prevalence rate of 12.5%). CRS significantly reduces the patients' quality of life and causes functional and emotional impairment Various conditions contribute to the pathophysiology of CRS. The etiology of CRS may be inflammatory, such as viral, bacterial, and fungal infections, allergy and asthma, and polyposis, or noninflammatory, such as neural dysfunction, nociceptive dysfunction, and gastroesophageal reflux (1). The Chronic rhinosinusitis (CRS) is distinguished by continuous inflammation of the mucous membranes of the nose and paranasal sinuses, lasting for 12 weeks or more (2), Due to its high sensitivity and specificity, standard computed tomography (CT) scanning is the gold standard method for CRS diagnosis, Despite the high accuracy of conventional CT scanning, its high costs and high radiation doses have limited its application (1). Endoscopy of the paranasal sinuses allows the observation of anatomical areas and the evaluation of sino nasal lesions and their relationship with endonasal structures. Diagnostic sinus endoscopy is an invasive and costly method for the assessment of CRS that needs local or general anesthesia. In addition, it cannot be applied to all patients, may be difficult or impossible in children, and may be associated with severe complications. Regarding these limitations, finding an alternative diagnostic modality is beneficial (1). The diagnostic criteria for chronic rhinosinusitis (CRS) submitted by (AAO)– (HNS) Foundation depend on the existence of profitable clinical characteristics, as well as evidence of inflammation noticed during paranasal sinuses CT scan and nasal endoscopy (1, 3). The primary and secondary CRS symptoms were minimized to less than five distinguishable symptoms, and inflammation of the middle meatus was formed in the diagnostic criteria for CRS to improve diagnosis accuracy via objective data (1, 4) A duration of 12 or more needs to exhibit more than two manifestations, such as mucopurulent drainage, nasal blockage, pain-pressure-fullness of the Face, and hyposmia (1, 5).

A nasal endoscopy is inspected by illuminating and magnifying the nasal cavity, meatus, and nasopharynx (6, 7), yet a CT scan delivers specific and vast details on the inside architecture of the nose and sinuses and any current abnormalities or illnesses. Divergent results have been reported concerning the link between the finding of nasal endoscopy and CT scan of the sinus in persons with chronic rhinosinusitis (CRS). (8, 9). Finding out how nasal endoscopy stacks up against CT scans in our setting in terms of sensitivity, specificity, (PPV), (and NPV) is crucial from an economic viewpoint for our patients. Specially for patients with restricted finances, the results will help direct the selection of study in CRS patients. Consequently, various research was achieved to evaluate endoscopy accuracy corresponding to CT scans for diagnosing CRS (4, 10, 11). Studies have demonstrated that nasal endoscopy improves the accuracy of diagnosing chronic rhinosinusitis (CRS) in individuals who fulfill the symptom criteria outlined in the recommendations. Diagnostic nasal endoscopy permits lessening the demand for CT scans, lowering costs, and minimizing radiation exposure (12). Previous studies have not shown a relation between endoscopy and CT scan accuracy in diagnosing CRS among Iraqi society, especially patients from Baqubah City. Our study explores this correlation between endoscopy and CT scans as diagnostic tools for CRS, in particular, Baqubah City patients.

Patients and Methods

Study population

The investigation was performed in the (ENT) Department outpatient clinic at Baqubah Teaching Hospital, located in the Diyala government, Iraq. It was a prospective study.

We chose 100 adults at random from a pool of 134 cases; individuals with a clinical diagnosis of CRS and a terminated permission form were Participants aged 18 to 63. The enrollment period was three months, from October 2023 to January 2024. Participants had CT scans and nasal endoscopies of the paranasal sinuses as part of the research. Chronic rhinosinusitis (CRS) diagnosis was confined to utilizing the clinical practice guidelines for adult rhinosinusitis patients authorized by (AAO–HNSF). (Table 1) (1).

Patient data, medical history, and physical examination outcomes were acquired by employing a standardized questionnaire.

Excluded criteria

People under the age of 18, patients with (who had sino nasal surgery, sino nasal tumor, immunocompromised, cystic fibrosis, and who refused to give consent). They were removed from the sample population. Participants could not receive a CT scan of the paranasal sinuses simultaneously with a nasal endoscopy or if there was more than a three-month gap between the two procedures.

Investigation

A Senior Resident Doctor performed a nasal endoscopy in the clinic employing a zero-degree and thirty-degree Medtronic 4-millimeter rigid endoscope while the patient was under topical anesthesia. Disc documentation of endoscopic findings was done. An Otorhinolaryngology specialist assessed and estimated a grade to this. The expected notable observations showed purulent discharge (creamy color), meatal or ethmoidal mucosal edema, and polyps in the middle meatal region or nasal cavity. After twelve weeks of the nasal endoscopy, a CT scan of the paranasal sinuses was performed. A consultant radiologist documented this data. The important predicted findings possessed sinus mucosal thickening, sinus opacification (OMC) obstruction, and polyps. Manifestation of polyps possesses thickening of bone trabeculae, spherical lumps within the nasal cavity, an enlarged sinus or parts of the nasal cavity, and enlarged sinus ostia. The thickening of two or more sinus walls was employed to demonstrate mucosal thickening of the sinus, whereas sinus opacification was indicated as partial or complete opacification. Right or left pansinusitis involves all four sinuses on one side. Bilateral pansinusitis concerns all four sinuses on both sides. Sinus opacification was categorized as entire or partial. The Philips Brilliance 64-slice CT employed in this investigation was a 2007 model—hospital CT scan machine. Coronal, sagittal, and axial images were taken utilizing 2 mm incisions.

Ethical approval

The University approved the study of Diyala's Baqubah medical faculty. The data for the questionnaire was obtained with the patient's permission. (Document no. 2024ALS841).

Statistical analysis

The data were scrutinized employing IBM version 23 of (SPSS). The numeric variables, standard deviation, and standard error were estimated ($P \leq 0.05$). Nasal endoscopy corresponded to paranasal sinus CT images. Nasal endoscopy sensitivity, specificity, PPV, and NPV were compared to CT scan findings table 1. (13, 14).

Table (1): Criteria for CRS diagnosis seen in Nasal Endoscopic or CT scans the Purulent middle meatus/anterior ethmoid mucus can see in Nasal Endoscopic, the Paranasal sinus inflammation more Diagnoses by CT, SCAN

	Findings	
Manifestation	**Nasal Endoscopic**	**CT scan**
Front/back nasal mucopurulent drainage, Congestion/obstructed nose, Face pain/pressure/fullness, hyposmia	**Purulent middle meatus/anterior ethmoid mucus/edema, Nasal/middle meatus polyps**	**Paranasal sinus inflammation**
Two or more symptoms and signs, together with one or more inflammatory abnormalities on endoscopic or CT scans, must be present for 12 weeks in order to diagnose CRS.		

Results

One hundred thirty-four adult patients were recognized with chronic rhinosinusitis (CRS) over a three-month study course spanning from October 2023 to January 2024 in the outpatient unit of (ENT) clinic. One hundred individuals were consecutively recruited in the experiment. Out of all the patients, 74.6% were qualified for the trial, while the remaining 25.3% were disqualified because they could not have both nasal endoscopy and CT scan within a 3-month; the study included individuals aged 18 to 65, with 41% being male and 59% being female. Individuals between the ages of 25 and 44 comprised 53% of the total population. Patients' CRS symptoms and frequencies are shown in Table (2).

Table (2): Diagnostic criteria for chronic rhinosinusitis in the study population. Show the rhinorrhea occur in 95 % ,he of study population and nasal obstruction occur in 90% the headache pressure, Pain,fullness of the face hyposmia/anosmia , excessive sneezing occur in 65%,50%45%,44% respectively

Diagnostic characteristics of CRS	Patients number
Rhinorrhea	95
nasal obstruction	90
headache	65
pressure, Pain, the fullness of the face	50
hyposmia/anosmia	45
excessive sneezing	44
nose, throat, and ear itching	42
cough	34
epistaxis	32
halitosis	30
dental pain	17
SD	20.437
SE	6.463
P- value	0.0001*
* Significant (P ≤ 0.05)/ n=100	

Diyala Journal of Medicine

Purulent (cream-colored) middle meatus discharge was the most prevalent symptom on nasal endoscopy (58%). Subjects had 39% middle meatal edema and 30% nasal polyps. table (3).

Table (3): Nasal endoscopy findings indicate middle meatal discharge at 58%, middle meatal mucosal edema at 39%, and nasal polyps at 30%.

Nasal endoscopy findings	Patients number
Middle meatal discharge	58
Middle meatal mucosal oedema	39
Nasal Polyps	30
SD	6.364
SE	4.500
P- value	0.083
* Significant (P ≤ 0.05)/ n=100	

On the other side, CT scan findings demonstrated, Middle meatal oedema was (27 %), and nasal polyps were (20 %), Obstruction of osteomeatal complex was (40 %), sinuses Anatomic variations was (43 %) and Sinuses inflammation was (83 %) were noted of the subjects. table (4)

Table (4): nasal CT scan finding Middle meatal mucosal edema was observed in 27% of cases. Obstruction of the osteomeatal complex was noted in 40% of cases. Nasal polyps were present in 20% of cases. Sinus inflammation was detected in 83% of cases. - Anatomic variations were identified in 43% of cases.

Sinus pathology identified by computed tomography	Patients number
Middle meatal mucosal edema	27
Obstruction of osteomeatal complex	40
Nasal Polyps	20
Sinuses inflammation	83
Anatomic variations	43
SD	26.382
SE	13.194
P- value	0.039*
* Significant (P ≤ 0.05)	

The maxillary sinus had the highest prevalence of inflammation among the 65 individuals. In 30 individuals, the Sphenoid sinus was the least affected. Mucosal thickening was predominantly observed in the maxillary sinus, affecting 55 patients. Conversely, the Sphenoid sinus showed the least amount of mucosal thickening, affecting only 16 patients. On the other hand, opacification was mostly observed in the maxillary sinus, affecting 42 patients. The Sphenoid sinus had less opacification, observed in 18 patients. Based on CT scan findings related to sinus morphology, the most commonly affected sinus is the maxillary sinus, with 65% of cases showing involvement. This includes 42% with sinus opacification and 55% with mucosal thickening. The ethmoid sinus is affected in 53% of cases, with 25% showing sinus opacification and 30% showing mucosal thickening. The frontal sinus is involved in 30% of cases, with 20% exhibiting sinus opacification and

Diyala Journal of Medicine

10% showing mucosal thickening. The sphenoid sinus is affected in 25% of cases, with 15% showing sinus opacification and 10% showing mucosal

thickening. In cases of pansinusitis, mucosal thickening and opacification occur in 10% of instances. Figure (1):
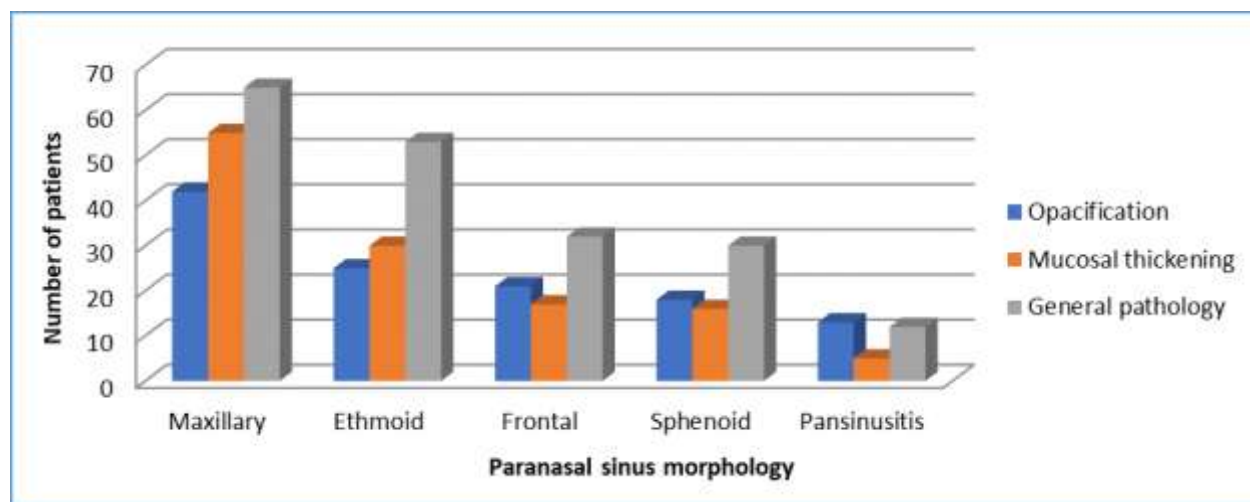
Figure (1): CT scan finding based on the morphology of sinus

Discussion

The investigation outcomes revealed a predominance of females among the study participants, which may be associated with women encountering more significant problems with postnasal drainage; our finding is compatible with previous studies, which have also shown that females had a more significant occurrence of CRS (in the presence and absence of nasal polyps). (15)

The study also revealed that the considerable prevalent manifestations of CRS were rhinorrhea and nasal blockage. These results are compatible with previous studies examining similar clinical presentations (3, 16, 17), In addition to nasal blockage and rhinorrhea, other common symptoms prevalent among the study patient population were headache, facial pain, facial pressure, and anosmia. These findings were consistent with earlier studies showing that the most prevalent CRS symptoms were nasal blockage, congestion, rhinorrhea, weariness, headache, face pressure, and loss of smell (18). The nasal endoscopy findings in our research indicated that the most prevalent observation was the existence of middle meatus discharge. Additionally, there was evidence of mucosal edema in the middle meatus and the subsequent presence of nasal polyps; these findings

were consistent with another research that demonstrated middle meatus purulent discharge as the most prevalent observation during nasal endoscopy (19), While The other had nasal endoscopy-reported middle meatus mucosa edema. (4). Conversely, separate research shows nasal polyps were a prevalent observation during nasal endoscopy (20). The results of our research indicate the presence of edema in the middle meatal mucosa and blockage of the stomatal complex, as shown in the CT scan. This result was consistent with previous research, which found that blockage of the stomatal complex was the most frequent observation on CT scans of individuals with (CRS) (21). According to another study, a CT scan showed that the sinuses most affected were the maxillary, ethmoidal, and sphenoid (22), These outcomes were compatible with the results of our study. These results may be attributed to the fact that the study sample group consisted of adult patients. Our study CT scan showed more opacification compared to mucosal thickness in the case of Pansinusitis; this fact illustrates the high severity of the disease if Pansinusitis is involved. The research found that the identification of nasal polyps by CT scan was lower linked to nasal endoscopy (23),

69

Which may correlate to the capacity of nasal endoscopy to detect middle meatus polyps of smaller dimensions corresponding to CT scans. In contrast to CT scans, nasal polyps exhibit different features when seen using nasal endoscopy (20). The study's results show that a correct diagnosis of CRS using positive symptoms by the AAO-HNS guidelines and endoscopy, in comparison to CT results, which are considered the gold standard; findings exhibit that nasal endoscopy is more specific than CT scan findings. Additionally, PPV is similar to endoscopy and CT scans. These outcomes align with an earlier study, which shows that integrating endoscopy into symptom-based diagnosis improves accuracy, PPV, NPV, and specificity from (42.8% to 69.1%), (39.9% to 66.0%), (62.5% to 70.3%), and (12% to 84.1%) respectively. Endoscopy substantially improves diagnostic accuracy for CRS in patient's symptom patients, and it may assist in lessening CT utilization in particular patients for whom endoscopy is conducted in order to diagnose CRS (24). One study saw that endoscopy and CT scores are extremely correlated when diagnosing individuals with CRS. Furthermore, abnormal endoscopic outcomes may reliably predict the presence of CT opacification, therefore confirming the significance of endoscopy in the process of clinical decision-making. Nevertheless, the negative predictive value of endoscopy is much smaller, meaning that a normal endoscopy does not guarantee a normal CT scan. Therefore, symptoms, endoscopy, and CT scans are mutually beneficial in assessing patients with post-ESS CRS (25). An additional study was performed to evaluate the correlation between symptom-based criteria and distinct mucopurulence findings on endoscopy and CT results in CRS. In comparison to CT, subjective symptom demonstration had poor predictive accuracy. On the contrary, Endoscopic mucopurulence detection was substantially linked with positive CT CRS and absent in negative CT findings. In comparison to computed tomography, Endoscopic nasal examinations for mucopurulence in OMC had a sensitivity of 24% and a specificity of 100%. Their results suggest that endoscopy can prove a diagnosis of CRS, but it cannot definitively exclude it. CT scans should be performed when there is suspicion of chronic rhinosinusitis (CRS), particularly in the lack of mucopurulence during endoscopy (26-29), Another study conveyed a sensitivity of 95.6%, specificity of 80%, positive predictive value (PPV) of 97.7%, and negative predictive value (NPV) of 66.7%. The study showed that nasal endoscopy is as effective as CT in detecting chronic rhinosinusitis (CRS) (21).

Hussein and Jaf limited diagnostic nasal endoscopy to behave similarly to CT scanning regarding sensitivity and specificity. Moreover, it can lessen unneeded diagnostic CT scanning operations as an outpatient technique (30). In contrast, another research study showed that nasal endoscopy had a sensitivity of 46%, specificity of 86%, positive predictive value (PPV) of 74%, and negative predictive value (NPV) of 64%. The research revealed that there was a weak association between nasal endoscopy and sinus conditions (4, 24, 31, 32). Our study limitation included that a few patients scheduled to get CT scans did not have their scans conducted on the same equipment since they had already had CT scans before reaching the hospital.

Diyala Journal of Medicine

Conclusion

The existence of purulent (cream-purulent) discharge and polyps in the middle meatus during nasal endoscopy is adequate to diagnose CRS in patients with favorable clinical characteristics. Nasal endoscopy has matching diagnostic accuracy to a CT scan, and CT scan findings are extremely associated with sinus endoscopy outcomes, given its superior accuracy, cost-effectiveness, and lessened radiation exposure.

Recommendation

Our study findings indicate that in addition to clinical features. Nasal endoscopy is a precise and cost-effective diagnostic method with minimum radiation exposure, used for diagnosing CRS. Thus, we suggest utilizing it as a principal and feasible alternative diagnostic technique.

Abbreviations

AAO–HNSF: American Academy of Otolaryngology-Head and Neck Surgery Foundation

CRS: chronic rhinosinusitis

CT: Computed Tomography

ENT: ear, nose, throat

ESS: endoscopic sinus surgery

SPSS: Statistical Package for Social Sciences

PPV: positive predictive value

NPV: negative predictive value

Source of funding

No source of funding.

Conflict of interest

The author acknowledges no conflict of interest in this study.

References

1. Zojaji R, Naghibzadeh M, Mazloum Farsi Baf M, Nekooei S, Bataghva B, Noorbakhsh S. Diagnostic accuracy of cone-beam computed tomography in the evaluation of chronic rhinosinusitis. ORL J Otorhinolaryngol Relat Spec. 2015;77(1):55-60. doi: 10.1159/000373927. PMID: 25765366

2. Rosenfeld RM, Piccirillo JF, Chandrasekhar SS, Brook I, Kumar KA, Kramper M, Orlandi RR, Palmer JN, Patel ZM, Peters A, Walsh SA, Corrigan MD. Clinical practice guideline (update): Adult Sinusitis Executive Summary. Otolaryngol Head Neck Surg. 2015 Apr;152(4):598-609. doi:10.1177/0194599815574247.PMID: 25833927.

3. Leo G, Triulzi F, Incorvaia C. Diagnosis of chronic rhinosinusitis. Pediatr Allergy Immunol. 2012 Aug;23 Suppl 22:20-6. doi:10.1111/j.1399-3038.2012.01320.x. PMID: 22762850

4. Lohiya SS, Patel SV, Pawde AM, Bokare BD, Sakhare PTJIJoO, Head, et al. Comparative study of diagnostic nasal endoscopy and CT paranasal sinuses in diagnosing chronic rhinosinusitis. 2016;68:224-9. doi.org/10.1007%2Fs12070-015-0907-7

5. Rosenfeld RM, Piccirillo JF, Chandrasekhar SS, Brook I, Ashok Kumar K, Kramper M, Orlandi RR, Palmer JN, Patel ZM, Peters A, Walsh SA, Corrigan MD. Clinical practice guideline (update): adult sinusitis. Otolaryngol Head Neck Surg. 2015 Apr;152(2 Suppl):S1-S39. doi:10.1177/0194599815572097.PMID: 25832968.

6. Halderman AA, Tully LJ. The Role of Allergy in Chronic Rhinosinusitis. Otolaryngol Clin North Am. 2017 Dec;50(6):1077-1090. doi: 10.1016/j.otc.2017.08.003. Epub 2017 Sep 28. PMID: 28964531.

7. Cho SH, Hamilos DL, Han DH, Laidlaw TM. Phenotypes of Chronic Rhinosinusitis. J Allergy Clin Immunol Pract. 2020 May;8(5):1505-1511. doi: 10.1016/j.jaip.2019.12.021. PMID: 32389275; PMCID: PMC7696652.

8. Singh GB, Arora N, Tomar S, Kwatra D, Kumar S. The role of sinus CT in surgical treatment decisions for chronic rhinosinusitis. Am J Otolaryngol. 2020 Nov-Dec;41(6):102729.

Diyala Journal of Medicine

doi: 10.1016/j.amjoto.2020.102729. Epub 2020 Sep 12. PMID: 32950832.

9. Alshammari D, Alshaikh R, Bakheet M, Janahi W, Alreefy HJIJoO, Head, et al. Correlation between Radiological Staging of Chronic Rhinosinusitis and Revision of Endoscopic Sinus Surgery. 2021;10(02):119. doi.org/10.4236/ijohns.2021.102013

10. Wong HB, Lim GHJPoSh. Measures of diagnostic accuracy: sensitivity, specificity, PPV andNPV.2011;20(4):316-8.doi: 10.137/journal.pone.0223832

11. Amine M, Lininger L, Fargo KN, Welch KC. Outcomes of endoscopy and computed tomography in patients with chronic rhinosinusitis. Int Forum Allergy Rhinol. 2013 Jan;3(1):73-9. doi: 10.1002/alr.21071. Epub 2012 Aug 7. PMID: 22887958.

12. Woo WK, Shin WC, Jung DK, Lee YB, Lee SD: The usefulness of cone beam computed tomography in endoscopic sinus surgery. J Rhinol 2012; 19: 45–49. doi.org/10.5624/isd.2020.50.4.299

13. Morgan GA, Leech NL, Gloeckner GW, Barrett KC. SPSS for introductory statistics: Use and interpretation: Psychology Press; 2004 doi: 10.4324/9781410616739

14. Jumaa AH, Abdulkareem AH, Yasin YS. The Cytotoxic Effect of Ciprofloxacin Laetrile Combination on Esophageal Cancer Cell Line. Asian Pac J Cancer Prev. 2024 Apr 1;25(4):1433-1440. doi:10.31557/APJCP.2024.25.4.1433.PMID: 38680005; PMCID: PMC11162738.

15. Lal D, Rounds AB, Divekar R. Gender-specific differences in chronic rhinosinusitis patients electing endoscopic sinus surgery. Int Forum Allergy Rhinol. 2016 Mar;6(3):278-86. doi: 10.1002/alr.21667. Epub 2015 Nov 17. PMID: 26574907.

16. Olowosusi OZ, Asoegwu CN, Olagunju AT, Nwawolo CC. A cross-sectional evaluation of the correlation between disease severity and quality of life in chronic rhinosinusitis patients in Nigeria. Eur Arch Otorhinolaryngol. 2015 Sep;272(9):2341-6. doi: 10.1007/s00405-014-3348-0. Epub 2014 Oct 26. PMID: 25344868

17. Mousa AMA, Anna Z, Julia D, Zhanna T, Serhii KJJoPRI. Clinical Presentations of Patients with Chronic Rhinosinusitis. 2021;33(46A):257-63 doi:10.9734/jpri/2021/v33i46A32864

18. Bhattacharyya N, Gilani S. Prevalence of Potential Adult Chronic Rhinosinusitis Symptoms in the United States. Otolaryngol Head Neck Surg. 2018 Sep;159(3):522-525. doi: 10.1177/0194599818774006. Epub 2018 May 8. PMID: 29737908.

19. Tyagi S, Srivastava M, Singh VJIJOHNS. Diagnosis of chronic rhinosinusitis: can nasal endoscopy be the new gold standard in developing countries. 2016;2(1):30-4. doi: 10.18203/issn.2454-5929.ijohns20160066.

20. Chavan A, Maran R, Meena K. Diagnostic Evaluation of Chronic Nasal Obstruction Based on Nasal Endoscopy and CT Scan Paranasal Sinus. Indian J Otolaryngol Head Neck Surg. 2019 Nov;71(Suppl 3):1948-1952. doi: 10.1007/s12070-018-1376-6. Epub 2018 May 5. PMID: 31763274; PMCID: PMC6848296.

21. Uwaneme SC, Asoegwu CN, Adekoya VA, Nwawolo CC. Correlation of Nasal Endoscopy and Computed Tomography Scan Findings in Adult Patients With Chronic Rhinosinusitis. J West Afr Coll Surg. 2020 Oct-Dec;10(4):11-15. doi: 10.4103/jwas.jwas_21_22. Epub 2022 Jun8. PMID: 35814964; PMCID: PMC9267044

22. Brai AE, Ibinaiye PO, Chitumu D, Shuaibu IYJJoRMitT. Plain radiography versus computed tomography scan in evaluation of adults with chronic rhinosinusitis in Zaria, Nigeria. 2020;1(1):8-12. doi : 10.4103/JRMT.JRMT-2-20.

23. Kumar A, Kumar P, Kumar NJJDMS. A comparative study of chronic sino-nasal diseases

between diagnostic nasal endoscopy (DNE) and CT scan. 2017;16:05-11.

doi: : 10.9790/0853-1601060510.

24. Kim DH, Seo Y, Kim KM, Lee S, Hwang SH. Usefulness of Nasal Endoscopy for Diagnosing Patients With Chronic Rhinosinusitis: A Meta-Analysis. Am J Rhinol Allergy. 2020 Mar;34(2):306-314.

doi: 10.1177/1945892419892157. Epub 2019 Nov 27. PMID: 31775519

25. Gregurić T, Trkulja V, Baudoin T, Grgić MV, Šmigovec I, Kalogjera LJEaoo-r-l. Association between computed tomography findings and clinical symptoms in chronic rhinosinusitis with and without nasal polyps. 2017;274:216573.

doi.org/10.20471/acc.2022.61.s4.8

26. Anselmo-Lima WT, Sakano E. Rhinosinusitis: evidence and experience: October 18 and 19, 2013–São Paulo. SciELO Brasil; 2015.
doi.org/10.1016/j.bjorl.2014.11.005

27. Yasin YS, Jumaa AH, Jabbar S, Abdulkareem AH. Effect of Laetrile Vinblastine Combination on the Proliferation of the Hela Cancer Cell Line. Asian Pac J Cancer Prev. 2023 Dec 1;24(12):4329-4337.

doi: 10.31557/APJCP.2023.24.12.4329. PMID: 38156870; PMCID: PMC10909105.

28. Bhattacharyya N. The role of CT and MRI in the diagnosis of chronic rhinosinusitis. Curr Allergy Asthma Rep. 2010 May;10(3):171-4. doi:10.1007/s11882-010-0103-5.PMID: 20425010.

29. Bhattacharyya N, Fried MP. The accuracy of computed tomography in the diagnosis of chronic rhinosinusitis. Laryngoscope. 2003 Jan;113(1):125-9.

doi:10.1097/00005537-200301000-00023. PMID: 12514395

30. Hussein RK, Jaf SMSJMJoB. A comparative study of diagnostic nasal endoscopy and computed tomography in chronic rhinosinusitis.2019;16(3):199-202.
doi.org/10.4103/MJBL _MJBL_20_19

31. Deosthale NV, Khadakkar SP, Harkare VV, Dhoke PR, Dhote KS, Soni AJ, Katke AB. Diagnostic Accuracy of Nasal Endoscopy as Compared to Computed Tomography in Chronic Rhinosinusitis. Indian J Otolaryngol Head Neck Surg. 2017 Dec;69(4):494-499.

doi: 10.1007/s12070-017-1232-0. Epub 2017 Oct 17. PMID: 29238680; PMCID: PMC5714920.

33. Srivastava M, Tyagi S, Kumar L. Comparative Evaluation of Chronic Rhinosinusitis Patients by Conventional Radiography, Computed Tomography and Diagnostic Nasal Endoscopy (DNE). Indian J Otolaryngol Head Neck Surg. 2016 Jun;68(2):173-8.

doi: 10.1007/s12070-015-0958-9. Epub 2015 Dec 18. PMID: 27340632; PMCID: PMC4899371

مقارنة التنظير الأنفي مع الأشعة المقطعية لتشخيص التهاب الجيوب الأنفية المزمن لدى المرضى البالغين في العراق

علي لفتة سلمان¹

الملخص

الخلفية الدراسية: يتم تشخيص التهاب الجيوب الأنفية المزمن (CRS) غالبًا بناءً على الأعراض السريرية. يعتمد التأكيد في هذا السياق على اكتشاف علامات الالتهاب أثناء التنظير الأنفي والأشعة المقطعية للجيوب الأنفية. بينما تعتبر الأشعة المقطعية الطريقة الأكثر موثوقية، أظهرت الأبحاث أن التنظير الأنفي أيضًا ذو قيمة ويمكن أن يوفر معلومات إضافية لدعم الأشعة المقطعية في تشخيص CRS

الهدف من الدراسة: كان الهدف من الدراسة هو توضيح موثوقية التنظير الأنفي مقارنةً بالأشعة المقطعية في تشخيص التهاب الجيوب الأنفية المزمن لدى المرضى البالغين المعالجين في مستشفى بعقوبة التعليمي.

المرضى وطرق العمل: تم جمع مئة عينه من المرضى البالغين والذين تم تشخيصهم سريريًا بإصابتهم بالتهاب الجيوب الأنفية المزمن في مستشفى بعقوبة التعليمي. جميع المرضى خضعوا لأشعة مقطعية للجيوب الأنفية وتنظير أنفي خلال ثلاثة أشهر موضوع هذه الدراسة، وتم ربط النتائج.

النتائج: أظهرت نتائج الدراسة أن الأعراض الأكثر شيوعًا التي لاحظت لدى المشاركين كانت إفرازات أنفية واحتقان أنفي، حيث أبلغ ٩٥٪ و ٩٠٪ من المرضى، على التوالي. كانت الملاحظة الأكثر شيوعًا خلال التنظير الأنفي هي وجود إفرازات صديدية في المجرى الأوسط، حيث لوحظت في ٥٨٪ من المرضى. وكان الجيب الفكي الأكثر تأثرًا، حيث تم رؤيته في ٦٥٪ من المرضى في الأشعة المقطعية، وكان ٤٠٪ يعانون من انسداد في المركب العظمي الوصلي في صور الأشعة المقطعية. كانت حساسية التنظير الأنفي ٧٣,٣٪، وخصوصيته ٨٥,٣٪، وقيمة التنبؤ الإيجابي ٩٢,٧٪، وقيمة التنبؤ السلبي ٥٥,٨٪. كما لم تجد الدراسة اختلافات ذات دلالة إحصائية في قيمة التنبؤ الإيجابي بين التنظير الأنفي والأشعة المقطعية. بالمقابل، كانت حساسية التنظير الأنفي أكبر بشكل ملحوظ من الأشعة المقطعية.

الاستنتاجات: وجدت الدراسة أن نتائج التنظير الأنفي للمرضى الذين يعانون من سمات سريرية إيجابية كانت إفرازات صديدية (بلون الكريمة) ووجود زوائد في المجرى الأوسط، وهو ما يكفي لتشخيص التهاب الجيوب الأنفية المزمن؛ أظهرت الدراسة أن التنظير الأنفي دقيق تقريبًا مثل الأشعة المقطعية وأن نتائج الأشعة المقطعية تتوافق جيدًا مع التنظير الأنفي، نظرًا لدقته، وتكلفته المنخفضة، وجرعة الإشعاع.

الكلمات المفتاحية: التهاب الجيوب الأنفية المزمن، التنظير الأنفي، الأشعة المقطعية، مستشفى بعقوبة التعليمي.

¹فرع الجراحة العامة ـ الانف واللاذن والحنجرة ـ كلية الطب ـ جامعة ديالى