

Role of contrast enhanced computed tomographic evaluation in the management of Wharton's duct calculus in older age group patients

Rajaram Sharma

Assistant professor, Radio-diagnosis Pacific Institute of Medical Sciences (PIMS), Umarda, Udaipur, Rajasthan, India-313001

Corresponding Author: Rajaram Sharma, Assistant professor, Radio-diagnosis Pacific Institute of Medical Sciences (PIMS), Umarda, Udaipur, Rajasthan, India-313001

Received date: November 30, 2022 **Accepted date:** December 14, 2022 **Published date:** January 05, 2023

Citation: Rajaram Sharma, (2023) Role of contrast enhanced computed tomographic evaluation in the management of Wharton's duct calculus in older age group patients. *Journal of Clinical Otorhinolaryngology* 5(1); DOI: [10.31579/2692-9562/065](https://doi.org/10.31579/2692-9562/065)

Copyright: © 2023, Rajaram Sharma. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract:

The salivary glands are exocrine type of glands that produce saliva which help in digestion, produce moisture to mouth and protect teeth to decay. The most common disease of the salivary glands is formation of stones i.e. known as sialolithiasis, affecting 12 in 1000 of the adult population. Males are much more affected than females and children are rarely affected.

Keywords: tomographic evaluation; wharton's duct calculus; group patients

Clinical presentation:

A 64 years old male presented to ENT department with progressive, painless swelling in right submandibular region. On physical examination the swelling is nontender and fixed, overlying skin was normal. He had a history of calculus in right submandibular gland few years back, for which he underwent surgery for removal of calculus. Keeping the past history in mind, ultrasonography of right neck was advised. The right submandibular gland was bulky and hypoechoic with increased internal vascularity. Parenchyma demonstrated multiple tiny hyperechoic calculi. A fairly large calculus (approx.20 mm) in the duct of the submandibular gland in right floor of mouth region.[Figure 1A,1B & 1C] Considering

the age of the patient, recurrence of the disease and painless progressive swelling, contrast enhanced CT neck was done to rule out any neoplastic etiology or any intraparenchymal complication. CECT scan revealed enlarged (measuring approx 28 x 29 x 37 mm) and relatively altered CT attenuation and heterogenous enhancement of right mandibular gland with irregular margins and surrounding inflammatory fat stranding. A large calculus (approx 10.5 x 9 x 12.7 mm) with 800-900 HU value seen near posterior part of right mylohyoid muscle, confirmed the USG findings. Multiple, tiny intraductal calculi are seen throughout the parenchyma [Figure 2A,2B,2C & 2D]. CECT helped us to delineate the duct with intraductal contents, differentiate inflammatory etiology with neoplastic and also ruled out intraparenchymal abscess formation.

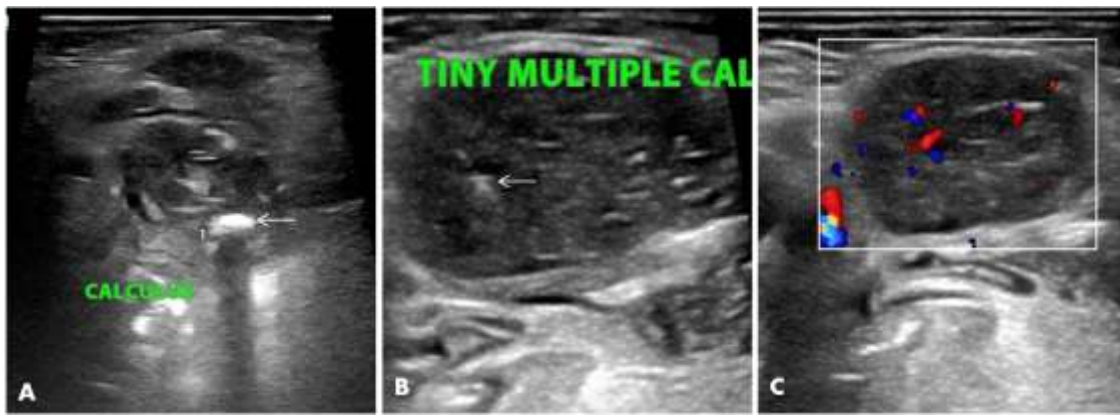


Figure 1. Ultrasonography images of the right submandibular gland. (A) The image demonstrates a large calculus in the duct of the submandibular gland duct (white arrow). (B) Right submandibular gland appears hypoechoic with multiple intraductal calculi in the parenchyma (white arrow). (C) Subtle increased vascularity in the right submandibular gland.

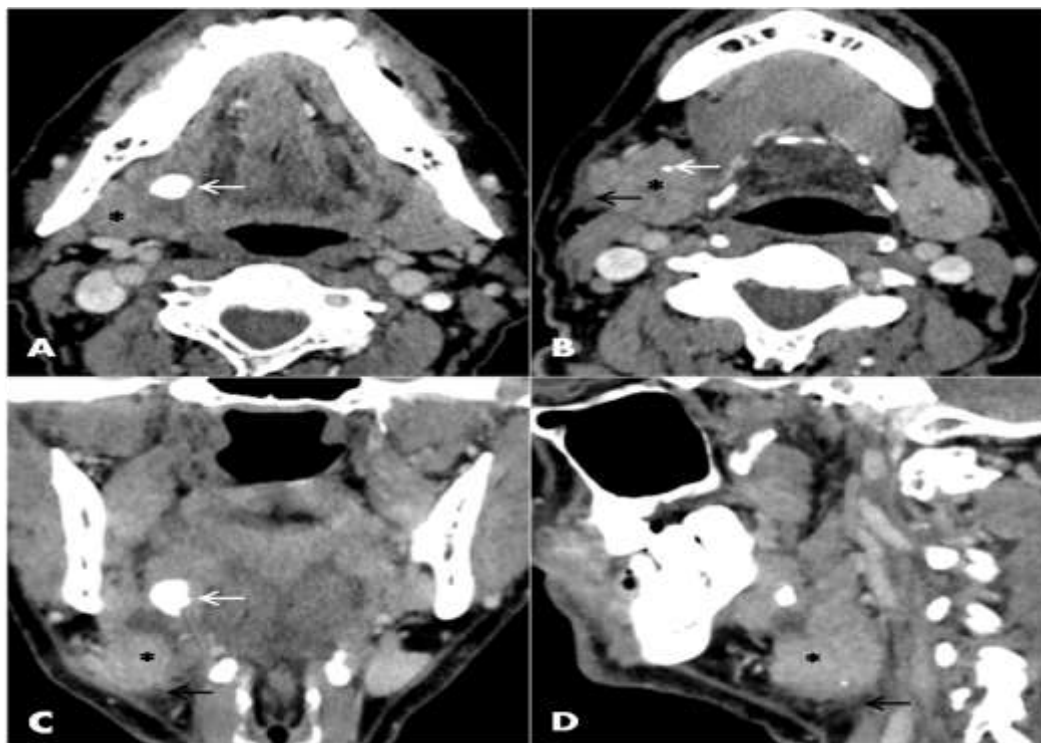


Figure 2. Contrast-enhanced computed tomography images of neck region at the level of both submandibular glands. (A) Axial plane at the level of the floor of the mouth showing a large calculus (white arrow) in the Wharton's duct adjacent to the right submandibular gland (asterisk). (B) The axial plane demonstrates intraductal calculi in the parenchyma (white arrow) with fat strandings in the perisubmandibular region (black arrow).

The right submandibular gland appears relatively bulky and shows altered CT attenuation (C & D). Coronal and sagittal plane respectively, demonstrate obstruction of right Wharton's duct with proximal dilatation of the duct and periglandular inflammatory changes (black arrow).

Due to age of the patient, recurrence of the disease, inflammatory features on CECT without tenderness on examination, surgeon counseled the patient for complete excision of the gland. Excised submandibular gland specimen was sent for histopathological examination revealed features of sialolithiasis with sialadenitis.

Discussion

The most common gland involvement is submandibular gland (92%) then

parotid gland (6%), sublingual gland (2%), in which ducts are being more frequently affected than the parenchyma. For evaluation of calculi non-contrast computed tomography (NCCT) neck is recommended because of its sensitivity to detect calcification but there is one drawback of NCCT is that it provides less information about duct dilatation and intraductal or glandular pathology than contrast-enhanced CT (CECT). CECT neck has been used for the evaluation of complicated stone disease in an older age group, suspected inflammatory or neoplastic process after detection of calculi on NCCT [1,2,3]. The purpose of this study was to highlight the role of CECT alone in the detection of salivary duct calculi and associated complications in older age group.

Conclusion

Unilateral, painless progressive neck swellings in older age group of patients needs detailed diagnostic work up to rule out neoplastic etiology. Contrast enhanced computed tomography not only tells about the presence or absence / number of the calculi but also delineate the duct status, neoplastic etiology causing recurrent intraparenchymal/intraductal calculi and intraparenchymal complications of the recurrent sialolithiasis. Open surgical procedures are preferred over laparoscopic stone removal in case of larger sized obstructed chronic intraductal/multiple intraparenchymal, intraductal calculi with diffuse inflammatory changes in the submandibular gland.

References

1. Yousem DM, Kraut MA, Chalian AA. (2000). Major salivary gland imaging. *Radiology*. 216:19-29.
2. Drage NA, Brown JE, Escudier MP, et al. (2000). Interventional radiology in the removal of salivary calculi. *Radiology*. 214:139-142.
3. 3.Guideline summary: ACR Appropriateness Criteria neck mass/adenopathy. (2017). National Guideline Clearinghouse (NGC). Rockville, Maryland: Agency for Healthcare Research and Quality.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI: 10.31579/2692-9562/065

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://auctoresonline.org/journals/journal-of-clinical-otorhinolaryngology>