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Case Report

Foreign body in the right nasal cavity secondary to embedded dacryocystorhinostomy tube

Mohamed Al-Arayedh[1]*, Muneera Al-Rowaila[2], Heba Al-Reefy[3]

[1]ENT clinic, Kingdom of Bahrain, Awali Hospital, Student at Jordan University of Science and Technology, Jordan
[2]King Faisal University, Kingdom of Bahrain, Awali Hospital, Bahrain
[3]ENT Clinic, Awali Hospital, Awali, Kingdom of Bahrain

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***Correspondence:**
Dr. Mohamed Al-Arayedh,
E-mail: Mohammed.alarayedh1@gmail.com

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ABSTRACT

A 39-year-old male patient was presented with foreign body sensation eight months post unilateral dacryocystorhinostomy (DCR) tube procedure in his right lower Punctum. On examination, the (silicon-based stent) was patent on the right orbital Punctum. However, the nasal element of the DCR tube was undetected during examination using the nasal speculum. endoscopic examination of the nasal cavity failed to reveal the nasal portion of the tube. None of the approaches performed were successful to detect the exact site of the stent. Therefore, the patient was transferred to the theatre to remove the tube surgically under general anaesthesia. In the operating table, endoscopic examination of the right nasal cavity revealed a granuloma over the nasal portion of the tube, embedded in the lateral nasal wall. Accordingly, the granuloma was then suctioned, which led to the appearance of the DCR tube. The tube was then removed, and the patient established a patent nasal airway. The patient was discharged on the same day, with no postoperative complication. As per the presented case, the following case report will be discussing the potential causes that might have led to the granuloma formation. We aim in the analysis of this case to scale down post DCR procedure complications by comparing the efficacy of silicon-based stents to other type of stents, as to guide surgeons into a safer and lesser invasive approach. In the majority of complicated DCR procedures with granuloma formation, the granulomas are suctioned in a clinical setting. However, the patient needed a more invasive approach, by removing the granuloma surgically to establish a patent nasal airway.

Keywords: Dacryocystitis, DCR, Granuloma, Rhinology, Ophthalmology

INTRODUCTION

Dacryocystitis is a bacterial infection manly by *Staphylococcus* and *Streptococcus* species.[1] In the lacrimal sac, which typically occurs due to an obstruction within the nasolacrimal and result in backup and recession of tears within the lacrimal sac.[2] Mostly, Dacryocystitis is treated with antibiotics and steroids combination (Polytrim, gentamicin, tobramycin, and TobraDex).[3,4] However, after failure of medical treatment, dacryocystorhinostomy (DCR) procedure is performed to release the acquired nasolacrimal duct obstruction dacryocystorhinostomy (NDO).

DCR is a procedure that was first introduced by Addeo Toti in 1904.[5] The procedure back then was performed externally by making an external skin incision where the periosteum and the sac were uplifted using a punch.[6] Therefore, ostium is created. Moreover, using canalicular prob as a guid, the medial wall of the sac gets excised. A corresponding piece of nasal mucosa is then removed.[6]

However, in 1989, a minimally invasive endoscopic approach was developed resulting in the same outcome with less complications.[6] The procedure is performed by inserting an endoscope through the nose, making an Ostium that a stent (DCR tube) can pass through.[6] The

procedure aims to bypass the obstructed nasolacrimal duct, by connecting the internal common Punctum directly to the nasal cavity. Therefore, restoring the normal physiology and flow of tears (Figure 1 A).[6]

CASE REPORT

A 39-year-old male patient was presented with foreign body sensation eight months post unilateral DCR tube procedure in his right lower Punctum. On examination, the (silicon-based stent) was patent on the right orbital Punctum. However, the nasal element of the DCR tube was undetected during examination using the nasal speculum. (Figure 1 B) clinical endoscopic examination of the nasal cavity failed to reveal the nasal portion of the tube, Despite the massaging that has been done on the lacrimal punctum to detect the DCR element in the nasal cavity. None of the approaches performed were successful to detect the exact site of the stent. Therefore, the patient was admitted and transferred to the theater to remove the tube surgically under general anesthesia.

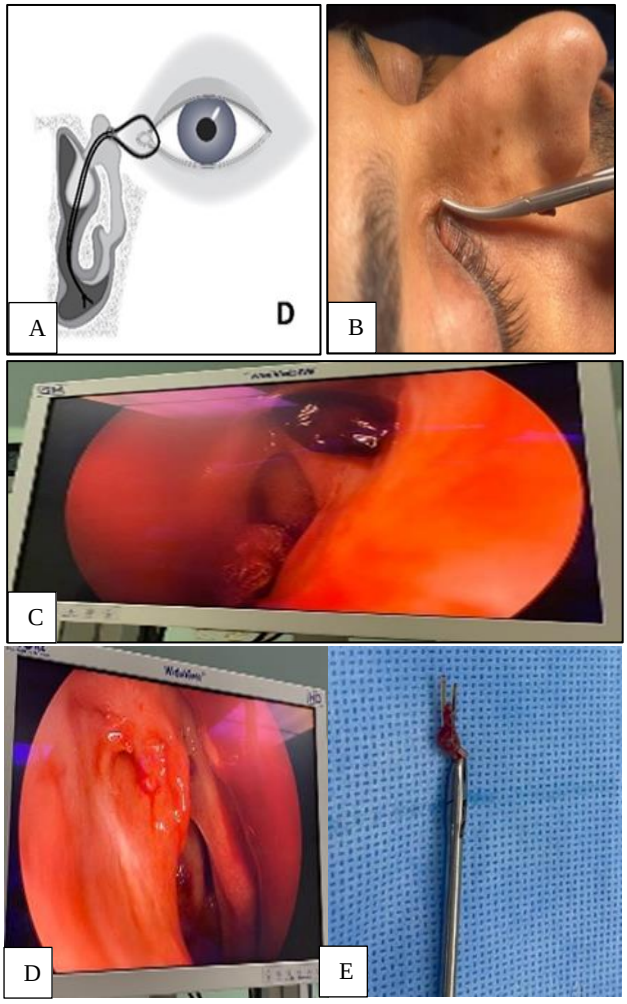

Figure 1 (A-E): Dacryocystorhinostomy procedure. Lacrimal portion of silicon stent. Endoscopy of granuloma embedded on lateral nasal wall. Lateral nasal wall cleared after granuloma extraction. Silicon stent removed with granuloma.

In the operating table, endoscopic examination of the right nasal cavity revealed a granuloma over the nasal portion of the tube embedded in the lateral nasal wall (Figure 1 C). Accordingly, the granuloma was then suctioned, (details of the surgical procedure under GA) which led to the appearance of the DCR tube. The tube was then removed (Figure 1 D), and the patient established a patent nasal airway (Figure 1 E). The patient was discharged on the same day, with no postoperative complication.

DISCUSSION

Endoscopic approaches have displayed a significant improvement in the rate of post-operative complications when it comes to DCR procedures. The complications that can be noted post-DCR approaches can vary from minor to major complications.[7] Most seen complications include ecchymosis, burning sensation overlying the skin area under the sight where the procedure has been performed, such as the nostrils.[7] Major complications scale from bleeding into the orbits, muscular injury, specifically the rectus muscle and injuries in the inferior canaliculus.[7]

Multiple studies have been conducted to forecast the clinical efficacy of using a silicon-based stent as an element in DCR procedures. For instance, a meta-analysis has been made by Dr. Do Hyun Kim to review the efficacy of using a silicon-based stent in comparison to a controlled group that had no application of a silicon-based stent.[8] The study has concluded that there is no statistical difference between the two groups when it comes to the efficacy of the procedure. However, the silicon-based stent group have exhibited a higher incidence of postoperative bleeding and eyelid problems.[8] The study has also noted that using a silicon-based stent with a mucosal flap have shown a decrease in the post operative complication rates.

As per the presented case, the tube that was used intraoperatively to bypass the lacrimal sac was silicon based, which might have aided to the development of the granuloma that was imbedded in the lateral aspect of the patient's nasal wall.

A study was performed based on the data obtained from the senior author's clinic to annotate the frequency of granuloma formation post DCR procedures. The data have demonstrated a success rate of 93.75% DCR procedures with no post operative complications. Granuloma formation was found in 6.25% of patients. Accordingly, Granuloma formation after an endoscopic DCR procedure is not a frequent complication that patients might develop.[7] implying to the presented case, the following patient was the only patient that required a surgical approach to remove the Granuloma, as granulomas are usually suctioned in the clinic. In contrast, a study performed by Dr Islam Alobid have stated that silicon stenting may help to ameliorate the

follow-up sessions when removing fibrins, blood clots, and crusts.[7] despite the use of a silicon stent, the patient required an invasive approach to remove the granuloma. Moreover, by using a mucosal flap with the silicon stent, the approach might aid to a better outcome with lesser complications.

CONCLUSION

DCR procedure remains a safe procedure that contributes to better quality of patients' lives. However, minor complications are not ruled out, just like any other procedures. Most post DCR complications are resolved by a clinical approach and reduced through patients' compliance during the scheduled follow-ups post operatively to rule out minor complications prior to its aggravations. As discussed, the silicon-based stents is a factor that contributed to the surgical approach of the embedded granuloma which is conventionally removed in clinic.

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REFERENCES

1. Taylor R, Ashurst J. Dacryocystitis. Ncbi.nlm.nih.gov. 2022. Available at: https://www.ncbi.nlm.nih.gov/books/NBK470565/. Accessed on 16 August 2022.
2. Dacryocystitis Eye, Wiki. Eyewiki.aao.org. 2022. Available at: https://eyewiki.aao.org/Dacryocystitis#:~:text=Dacryocystitis%20is%20inflammation%0of%20the,tears%20within%20the%20lacrimal%20sac. Accessed on 16 August 2022.
3. Garrity J. Dacryocystitis-Eye Disorders-MSD Manual Consumer Version. MSD Manual Consumer Version. 2022. Available at: https://www.msdmanuals.com/home/eye-disorders/eyelid-and-tearing-disorders/dacryocystitis#:~:text=Acute%20dacryocystitis%20is%20usually%20treated,times%20a%20day%20also%20helps. Accessed on 16 December, 2022.
4. Dacryocystitis Treatment and Management: Medical Care, Surgical Care, Consultations. Available at: https://emedicine.medscape.com/article/1210688-treatment. Accessed on 16 August 2022.
5. Sinha A, Phukan J, Saha R. Endoscopic versus external approach dacryocystorhinostomy: A comparative analysis. Nigerian Med J. 2013;54(3):165.
6. Shun-shin G, Thurairajan G. External dacryocystorhinostomy-an end of an era? Bri J Ophthalmol. 1997;81(9):716-7.
7. Bernal-Sprekelsen M, Alobid I, Mullol Miret J. Atlas of Lacrimal Surgery, 2007. Springer, Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg. 2007;1.
8. Kim D, Kim S, Jin H, Kim S, Hwang S. The Clinical Efficacy of Silicone Stents for Endoscopic Dacryocystorhinostomy: A Meta-Analysis. Clin Exp Otorhinolaryngol. 2018;11(3):151-7.

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