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Research Paper

External Dacryocystorhinostomy in the Era of Endoscopic Surgery: Experience from 60 Cases

Collaborative study between Hassan II Military Hospital of Laâyoune and the Specialty Hospital of Rabat

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Abstract
Purpose: *To evaluate the anatomical and functional outcomes of external dacryocystorhinostomy (DCR) in the treatment of lower lacrimal duct obstructions and analyze the factors influencing surgical success. Methods: A retrospective descriptive study of 60 patients operated on between January 2022 and June 2025 in the ophthalmology departments of Rabat and Laâyoune.*

Results: *The mean age was 48 years (22–75 years) with a female predominance (70%). The main symptoms were chronic epiphora (100%), recurrent infection (35%), and painful swelling (25%). Chronic primary dacryocystitis accounted for 80% of cases. Bicanalicular silicone intubation was performed in 90% of cases. The anatomical success rate was 93% and the functional success rate 88%. Postoperative complications were rare (intraoperative bleeding 5%, granuloma 3%, recurrence 7%).*

Conclusion: *External DCR remains the reference technique for treating lower lacrimal obstructions, offering high success rates and excellent intraoperative visualization.*

Keywords: *Dacryocystorhinostomy; Lacrimal obstruction; Epiphora; Silicone intubation; External surgery.*

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I. Introduction

Obstruction of the lower lacrimal pathways is a common cause of chronic epiphora in adults [1]. Dacryocystorhinostomy (DCR) creates a communication between the lacrimal sac and the nasal cavity to restore physiological tear drainage [2]. Since Toti first described the procedure in 1904 [3], external DCR has remained the gold standard technique despite the emergence of endonasal and endoscopic approaches [4]. Its main advantages include direct visualization of the surgical field, precise dissection, and the ability to perform a wide mucosal anastomosis [5]. The aim of this study was to report the experience of two Moroccan ophthalmology departments with external DCR, to assess its anatomical and functional outcomes, and to discuss the factors influencing surgical success.

II. Patients and Methods

A retrospective study was conducted from January 2022 to June 2025 including 60 patients who underwent external DCR for confirmed nasolacrimal duct obstruction. Inclusion criteria were chronic dacryocystitis with complete obstruction confirmed clinically or by dacryocystography, and a minimum follow-up of 6 months. Patients with canalicular obstruction or previous nasal trauma were excluded.

Data collected included demographic characteristics, symptoms, intraoperative parameters (type of anesthesia, bleeding, use of silicone intubation), and postoperative outcomes. Anatomical success was defined as free irrigation on syringing, and functional success as complete resolution of epiphora.

III. Results

The mean age was 48 years (22–75 years). There were 42 females (70%) and 18 males (30%). The right side was affected in 55% of cases and the left in 45%. Symptoms included chronic epiphora (100%), recurrent infection (35%), and painful swelling (25%). Primary chronic dacryocystitis was the cause in 80% of cases, secondary causes (trauma or infection) in 20%. Local anesthesia with sedation was used in 85% of cases and general anesthesia in 15%. Bicanalicular silicone intubation was performed in 90% of cases, with a mean operative time of 40 minutes (30–65 minutes).

Complications included intraoperative bleeding (5%), postoperative infection (3%), granuloma formation (3%), and recurrence of obstruction (7%). Anatomical success (patent syringing) was achieved in 93% of cases, and functional success (absence of epiphora) in 88%. Failures were mainly due to fibrotic closure of the osteotomy site.

IV. Discussion

Our study confirms the reliability and safety of external DCR, with an anatomical success rate of 93%, consistent with international series [6–8]. The predominance of female patients (70%) agrees with reports linking it to narrower lacrimal ducts in women [9]. Direct visualization of the lacrimal sac allows controlled dissection and wide mucosal anastomosis, explaining the high success rate [10]. Silicone intubation, performed in 90% of our cases, maintains postoperative patency and reduces restenosis risk [11,12].

The few failures (7%) were due to postoperative fibrosis or infection, as reported by Tsirbas and Wormald [13]. Complications were rare and manageable, mainly minor bleeding or granuloma formation [14]. Although endonasal and endoscopic techniques are increasingly used, external DCR remains simpler, more cost-effective, and provides superior surgical control, especially in resource-limited settings [15–17].

V. Conclusion

External dacryocystorhinostomy remains the gold standard for the management of lower lacrimal obstructions. It combines high anatomical success rates, surgical simplicity, and wide applicability. Meticulous patient preparation and a broad mucosal anastomosis are key to long-term success. In our 60-case series, functional outcomes were excellent, confirming the relevance of this approach in modern ophthalmic practice.

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