

Endoscopic dacryocystorhinostomy in Kirkuk output and results

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Abstract

Epiphora and nasolacrimal duct obstruction is a common problem and endoscopic DCR is the treatment of choice and it has the advantages that there is no external scar with good results and minimal complications

The aim of this study to see the results of EDCR in Kirkuk and out come it is retrospective descriptive study otolaryngological department in Kirkuk general hospital from 2010 to 2012s

A total number of 60 EDCR done in Kirkuk general hospital from February 2010 to January 2012. Age of patients was from 3 to 60 years, 40 patients were female and 20 were male, all of them complaining of epiphora and some of them presented in addition to epiphora with abscess and mucocele. 40 of them had unilateral eye involvement while 20 patient had symptoms bilaterally. All cases are diagnosed as nasolacrimal duct obstruction and confirmed by an ophthalmologist and then sent to us, All of them underwent EDCR with stent insertion. Follow up of patients in our study was two years. The operative techniques described in details, 48 patients had complete disappearance of symptoms so success rate in our study was 80%, while 12 patients had recurrence of symptoms, so failure rate was 20%, 4 patients underwent revision surgery with good results while others refused to do surgery again. The most common complication was adhesion of the nasal mucosa at the site of surgery, 15 cases developed this complication, while 10 cases had extrusion of the stent specially in children, which fortunately didn't affect the result of surgery, in conclusion

EDCR is a valid surgery for correction of nasolacrimal duct obstruction with good out come and no scar

Keywords: epiphora, nasolacrimal duct, DCR

Introduction

Stenosis of the nasolacrimal drainage system is encountered in clinical practice both by Ophthalmologists and Otorhinolaryngologists 1-4.

Causes are sometimes acute and chronic inflammation, trauma and congenital malformations. Presenting symptoms include chronic epiphora, swelling of the

lacrimal sac (LS) with subsequent dacryocystitis, and recurrent conjunctivitis. Endoscopic dacryocystorhinostomy (DCR) is indicated when medical therapy has failed to achieve resolution of the disease.

Since 1904, the surgical management accepted for this disease was the external approach, although Caldwell 6 was the first to propose, in 1893, the endonasal approach, unfortunately limited by the

technology, at that time. The introduction of endoscopes with different degrees of angulation for endoscopic sinus surgery, led to widespread use of endoscopic DCR. The procedure is a valid alternative approach for nasolacrimal canal obstruction. The advantages of the endoscopic approach are minor traumatization, preservation of lacrimal pump function, and reduction of surgical time. The success rate of endoscopic DCR is comparable to that of the traditional external procedure, with minimal morbidity and the possibility to treat simultaneous sinonasal diseases 7-8.

Personal clinical and surgical experience are herein described and surgical techniques, results and follow-up of DCR are discussed

patients and methods

Data are reported on a series of 60 endoscopic procedures of dacryocystorhinostomy, performed in kirkuk general hospital, between february2010 and january2012. The study population comprised 60 patients (40 female, 20 male) with naso-lacrimal duct obstruction. Age of the patients ranged between 3-60 years, In all cases, pre-operative diagnosis consisted in irrigation of the lacrimal pathways, confirmed by ophthalmologist; in selected cases, an additional computed tomography examination was carried out. All procedures were performed under general anaesthesia. A silicone tube was inserted in all patients for a period of 6 months. Personal clinical and surgical experience, focusing on surgical techniques used in dacryocystorhinostomy, was described.

Surgical outcome was evaluated postoperatively by subjective improvement of epiphora and the patency of neo-ostium of endoscopic DCR on nasal endoscopy. We defined a successful outcome as a marked improvement of preoperative epiphora and a patent neo-ostium on nasal endoscopic exam.

Operative techniques

Endoscopic DCR is performed under general anesthesia. The patient is placed in a supine position with the head elevated 15 degrees. After shrinkage of the nasal mucosa with a packing gauze soaked in a mixture of 1:200,000 epinephrine and 2% lidocaine, the mucosa surrounding the lacrimal sac is infiltrated with the same solution. A 4 mm diameter, zero or thirty degree endoscope is used. Using a sickle knife a vertical mucosal incision is made 8 mm anterior from the attachment of uncinat process at the lateral nasal wall and it is extended from just above the anterior attachment of the middle turbinate to the attachment of the inferior turbinate (Fig. 1A).

The mucosal flap is elevated backwards off the maxillary bone and removed with cutting forceps (Fig. 1B). Bone covering the lacrimal sac is then gently removed with rongeurs and diamond DCR bur until the sac is widely exposed to the level of the fundus (Fig. 1C). It is important to remove all bone covering the common canalicular opening. A metallic lacrimal probe is passed through inferior canaliculi and gently pushed medially to tent the lumen of the sac and to facilitate the incision on the sac. A horizontal incision then is made with a no. 12 blade on the inferior border of the

exposed sac wall. After identifying the lumen, a vertical incision is made with a slit knife and extended to the fundus of the sac. An anteriorly based lacrimal sac flap is created, everted and adjusted to accurately oppose the nasal mucosa (Fig. 1D).

If a silicone bicanalicular tube is intended, it is then positioned (Fig. 1E). A small gel foam patch is packed lightly in the exposed sac to keep the flap in position throughout the initial healing period. Light nasal packing is required unless there has been associated nasal surgery. Each patient is postoperatively prescribed oral antibiotics, nasal steroid spray and ophthalmic drops, and is followed regularly for nasal dressing. Nasal irrigation with saline is performed to prevent crust formation. The silicone tube is removed after six month.

Operative technique of endoscopic dacryocystorhinostomy. (A) A vertical mucosal incision is made at the lateral nasal wall. (B) Mucosal flap is elevated and resected. (C) The maxillary bone covering the lacrimal sac is removed. (D) The anteriorly based lacrimal sac flap is everted and adjusted to accurately appose the nasal mucosa. Note that the common canalicular opening (indicated with arrow) is visible. (E) The silicone bicanalicular tube is positioned. (F) Nasal endoscopic finding six months after surgery. The rhinostomy opening (arrow) is wide and patent. S: septum; MT: middle turbinate; IT: inferior turbinate; LS: lacrimal sac.

Results

A total number of 60 patient included in this study, 40 (66.6%) female and 20 male (33.3%) as shown in figure (1), aged ranged between 3 to 60 years as shown in tab (1). 55 was chronic and idiopathic while 5 cases was congenital. In our study all patients had epiphora, 15 cases presented with abscess while 5 cases presented with mucocele. Epiphora was unilateral in 40 patients and bilateral in 20 patients. 48 (80%) of patients had complete recovery after endoscopic dacryocystorhinostomy, while 12 patients had recurrence of epiphora and failure (20%). 4 patients had revision surgery with good results while 8 patients refused to do revision surgery. The most common complication was an adhesion of the mucosa of nasal cavity at the site of surgery which is treated by repeated suction and cleaning with follow up, another complication was tube extrusion specially in children, but fortunately didn't affect the result of surgery.

Discussion

Endoscopic DCR (EDCR) is considered as one of recent surgical techniques in management of epiphora due to chronic dacryocystitis. Intranasal endoscopic DCR is a simple, minimally invasive, day care procedure and had comparable result with conventional external DCR [9]. In this study, EDCR was evaluated and patients were followed within two years to judge the effect and safety of EDCR. Our results showed that the success was 80% while recurrence and failure was 20%. In this study, very low incidence of complications thus reflecting safety of EDCR. These

results were similar to those obtained by Yifan et al., that shown no significant difference in the success rates between the EDCR with and without silicone intubation (p value = 0.81)[10] Also similar results were reported by Ashok et al., 2006 in which eighteen children underwent endoscopic the DCR procedure. There were 5 males (27.7%) and 13 females (72.3%) with the maximum incidence between the age group of 4—7 years (age ranging from 10 months to 11.2 years). The follow up period ranged from 6 to 19 months average being 8.2 months. Relief of symptoms and endoscopic visualization of the patent stoma made into the lacrimal sac.. Seventeen patients (94.4%) fulfilled the criteria.[11] This was similar to Shahrokh et al, 2010 that stated that, there were no major complications during or after the operations. Complete cure occurred in 89.5% (after 6 months) and 74.2% (after 1 year) of the cases. It was found that patients younger than 55 years, with symptoms lasting less than 1 year, and without history of nasal problems, had significantly higher surgical success rates. Moreover, rates of failure were significantly lower in cases whose canaliculi were intubated for 5 to 6 months[12] This also was comparable to results obtained by Thomas et al, 2012 with success rate was 82.3% while it was 85.7% among the controls. Granulations, adhesions, and obliterative sclerosis occurred in a similar number of patients of both groups. However, granulations and adhesions did not have a bearing on the success rate in either group.[13] In the study of Pittore et al., the results in patients undergoing primary EDCR were better than those for revision of ExDCR, with an anatomical and functional success rate of

94.3%. Results following revision of ExDCR were 90.9% including one patient who was submitted to a second procedure. With very low incidence of complications as no major complications occurred intra-operatively. One postoperative septalhaematoma occurred, that was treated with incision and drainage, one epistaxis, treated

The endoscopic approach offers many advantages: less skin traumatization and scar tissue, with preservation of lacrimal pump function, avoiding trauma to the medial side tendon 1. Intra-operative bleeding was reduced, thus allowing better visualization of anatomical structures. It may be performed during acute dacryocystitis, where the external access is not indicated 14.

In expert hands, surgical times are reduced: data reported in the literature refer to a mean time, for endoscopic DCR, of 30 minutes, while with the traditional technique, mean time is about 45-50 minutes[15] In the present study, except for associated endoscopic procedures, the time required for primary surgical procedures was approximately 30 minutes (range 20-45 minutes) while for secondary procedures, 25 minutes. According to Terbet et al. 15, surgical times are closely related to the surgical experience of the surgeon, There are also disadvantages related to the use of this technique: intra-operative bleeding must be avoided; surgical ability requires many years of experience as stressed by many Authors: success rates of 94% and 58% have been reported in two groups of patients that underwent endoscopic DCR, with expert and non-expert surgeons, respectively 3.,,stent application, associated

with topical antibiotic lavage, maintains the lacrimal system open and prevents infections, resulting in a successful outcome. The stent was implanted for approximately 6 months; removal before this time is often the cause of failure. Granulation tissue may be detected after 3 months of stenting[16].

Nevertheless, use of the stent is not well established in the literature: according to some Authors, in fact, this procedure is contraindicated on account of an increase in the occurrence of DCR stenosis 17; others[18] have described no differences in the success rate using the stent system.

Some Authors have described the use of topical applications of mitomycin-C, 0.2 mg/mL for 25 minutes or 0.5 mg/mL for 30 minutes: this antimetabolite reduces scar formation, determining an increase in the success rate of endoscopic DCR[14]. We have no personal experience in the use of mitomycin-C.

Conclusions

In conclusion, endoscopic DCR is a valid procedure in the management of nasolacrimal canal obstruction; it is a less invasive procedure, an efficacious method with a high success rate and good outcome.

Current technology, with the introduction of endoscopes and imaging investigations, dedicated to the nasolacrimal system, allow to perform micro-invasive surgery, respecting the anatomical structures.

References

1. Hartikainen J, Antila J, Varpula M, Puukka P, Seppa H, Grenman R. Prospective randomized comparison of endonasal endoscopic dacryocystorhinostomy and external dacryocystorhinostomy. *Laryngoscope* 1998;108:1861-6. [PubMed]
2. Dietrich C, Mewes T, Kuhnemund M, Hashemi B, Mann WJ, Amedee RG. Long-term follow-up of patients with microscopic endonasal dacryocystorhinostomy. *Am J Rhinol* 2003;17:57-61. [PubMed]
3. Onerici M. Dacryocystorhinostomy. Diagnosis and treatment of nasolacrimal canal obstruction. *Rhinology* 2002;40:49-65. [PubMed]
4. Berlucchi M, Staurengi G, Rossi Brunori P, Tomenzoli D, Nicolai P. Transnasal endoscopic dacryocystorhinostomy for the treatment of lacrimal pathway stenoses in pediatric patients. *Int J Ped Otorhinolaryngol* 2003;67:1069-74. [PubMed]
5. Toti A. Nuovo metodo conservatore di cura radicale delle suporazioni croniche del sacco lacrimale. *Clin Med Firenze* 1904;10:385-9.
6. Caldwell GW. Two new operations for obstruction of the nasal duct with preservation of the canaliculi and an incidental description of a new lacrimal probe. *NY Med J* 1893;57:581-2.
7. Presutti L. Endonasal dacryocystorhinostomy. *Acta Otorhinolaryngol Ital* 1995;15:449-53. [PubMed]
8. Puxeddu R, Nicolai P, Bielamowicz S, Serra A, Puxeddu P. Endoscopic revision of

failed external dacryocystorhinostomy. *Acta Otorhinolaryngol Ital* 2000;20:1-5. [PubMed]

9. Rinki S, Anuradha S and Jyoti P: Endoscopic versus external approach dacryocystorhinostomy: A comparative analysis *Niger Med J*; 2013 May-Jun; 54(3): 165-169

10. Yi-fan Feng, Jian-qiu Cai, Jia-yu Zhang, Xiaohui Han: A meta-analysis of primary dacryocystorhinostomy with and without silicone intubation, *CAN J OPHTHALMOL*; 2011, VOL. 46, NO. 6, 521-527

11. Shok K. Gupta, Sandeep Bansal: Primary endoscopic dacryocystorhinostomy in Children, *International Journal of Pediatric Otorhinolaryngology*; (2006) 70, 1213-1217

12. Shahrokh F, Ehsan F, Ebrahim M: Endonasal laser-assisted microscopic dacryocystorhinostomy: surgical technique and follow-up results; *American Journal of Otolaryngology-Head and Neck Medicine and Surgery* (2010), 31, 84-90

13. Thomas P, Praveen K, Indira N, Shivaprakash, D: Significance of adjunctive mitomycin C in endoscopic

dacryocystorhinostomy *American Journal of Otolaryngology-Head and Neck Medicine and Surgery*; (2012) 33,47-50

14. Lee TS, Woog JJ. Endonasal dacryocystorhinostomy in the primary treatment of acute dacryocystitis with abscess formation. *Ophthal Plast Reconstr Surg* 2001;17:180-3. [PubMed]

15. Tarbet KJ, Custer PL. External dacryocystorhinostomy: surgical success, patient satisfaction and economic cost. *Ophthalmology* 1995;102:1065-70. [PubMed]

16. Soler Machin J, Castillo Laguarda JM, De Gregorio Ariza MA, Medrano J, Cristobal Bescos JA. Lacrimal duct obstruction treated with lacrimonasal stent. *Arch Soc Esp Oftalmol* 2003;78:315-8. [PubMed]

17. Allen K, Berlin AJ. Dacryocystorhinostomy failure: association with nasolacrimal silicone intubation. *Ophthalm Surg* 1989;20:486-9. [PubMed]

18. Walland MJ, Rose GE. The effect of silicone intubation on failure and infection rates after dacryocystorhinostomy. *Ophthalmic Surg* 1994;25:597-600. [PubMed]

ENDOSCOPIC DACRYCYSTORHINOSTOMY IN KIRKUK OUTPUT AND RESULTS

Age	No. of Case
3 – 7	5
20 – 30	10
30 – 40	20
40 – 50	15
50 – 60	10

Table 1. Age presentation

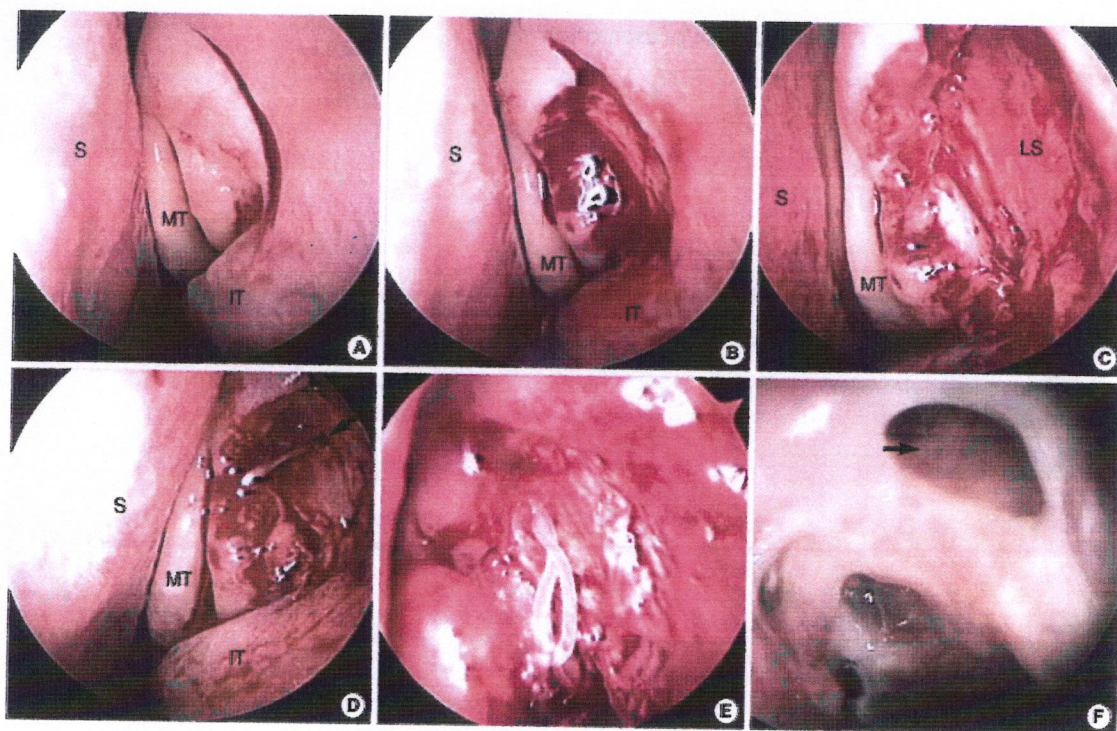


Fig.1

ENDOSCOPIC DACROCYSTORHINOSTOMY IN KIRKUK OUTPUT AND RESULTS

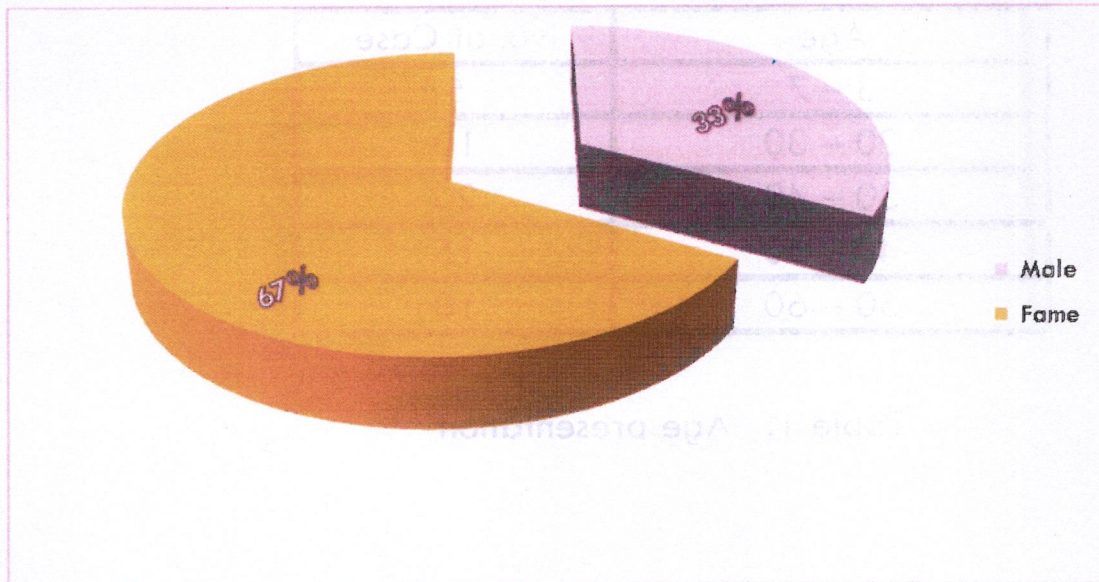
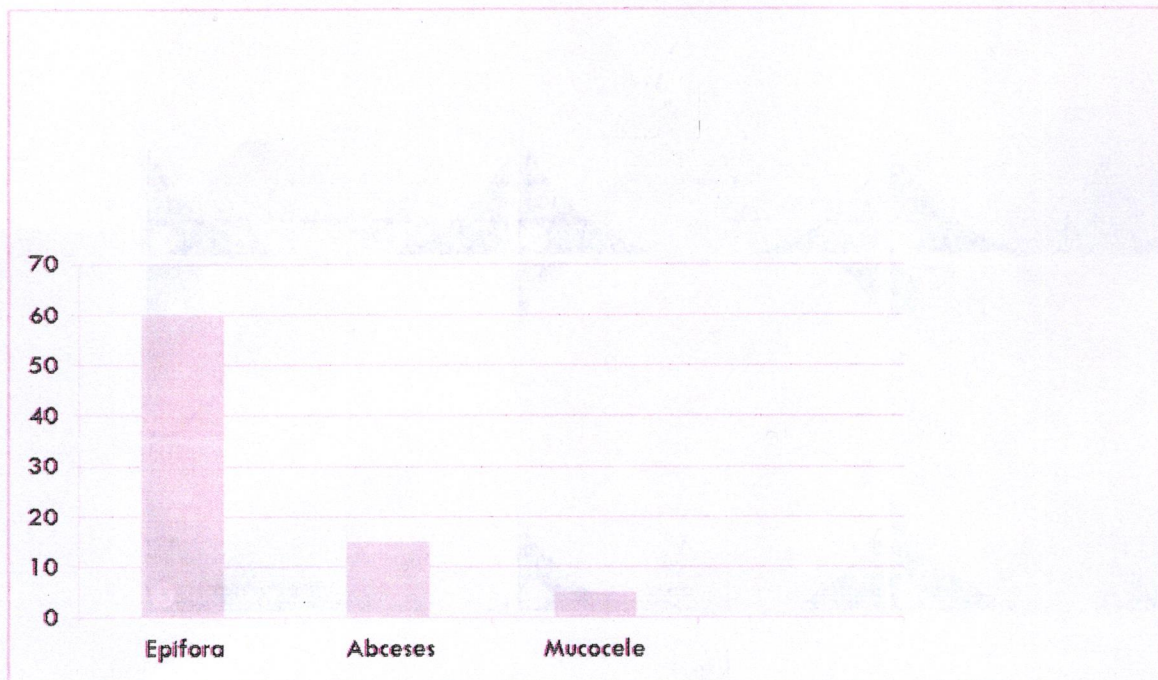


Figure.3.sex presentation



Presentation of nasolacrimal duct obstruction figure.4.

ENDOSCOPIC DACRYOCYSTORHINOSTOMY IN KIRKUK OUTPUT AND RESULTS

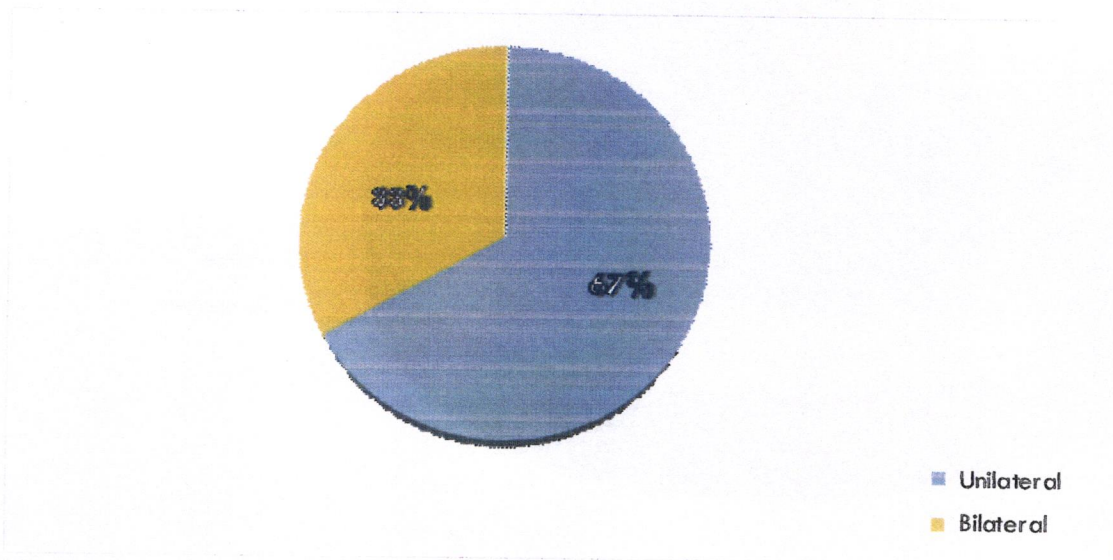


figure .5.Eye involved

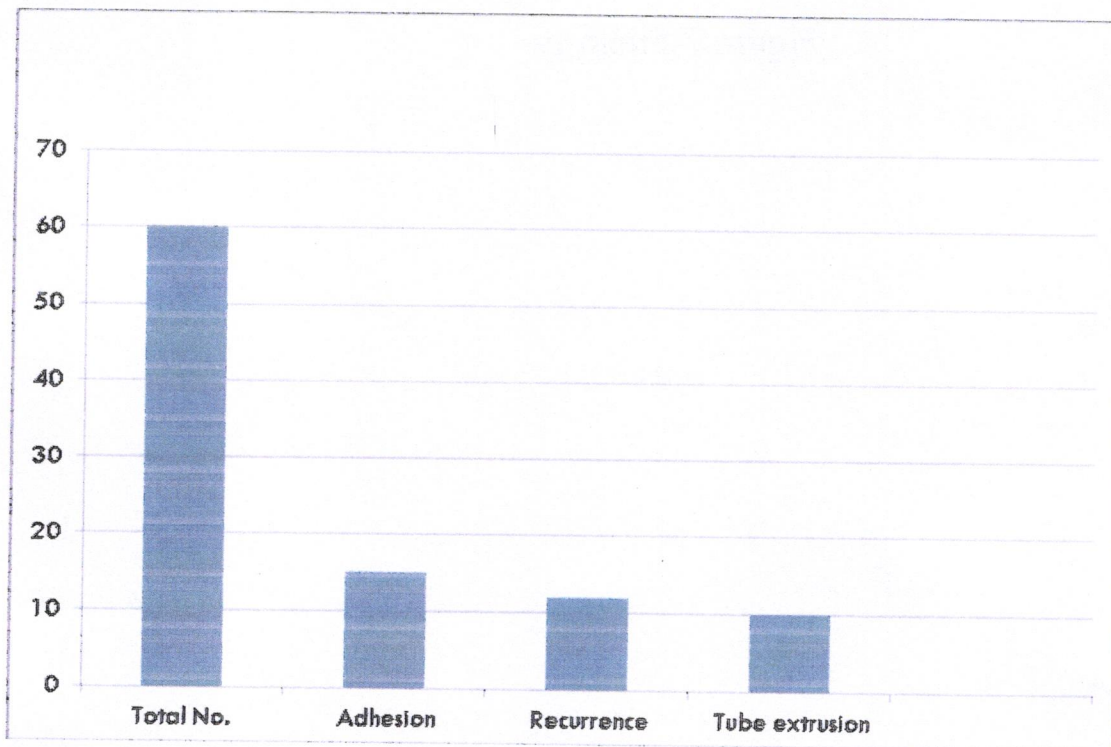


Figure .6.complications of DCR

ENDOSCOPIC DACROCYSTORHINOSTOMY IN KIRKUK OUTPUT AND RESULTS

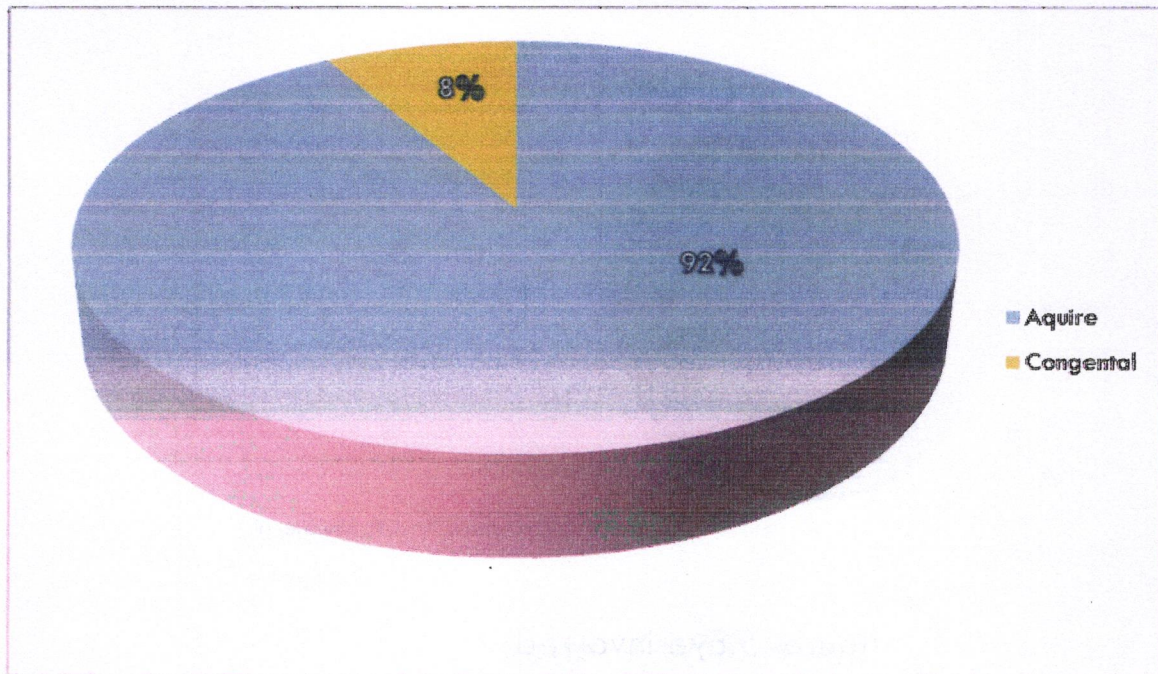


Figure.7.Etiology