

Outcome of Dacryocystorhinostomy With Silicone Intracystic Implant In Patients With Chronic Dacryocystitis

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Abstract

The present study evaluated the outcome of Dacryocystorhinostomy with silicone intracystic implant in patients with chronic dacryocystitis, in terms of Operative time involved, Success rate achieved (patency of the tract) and Complications on an out patient basis in the Postgraduate department of Ophthalmology, Government Medical College, Hospital, Jammu during the year 2010-2011. A group of 40 patients with obstruction of nasolacrimal duct were treated with DCR with silicone intracystic implant. Maximum no. of patients(65%) were <65yrs of age, the youngest patient being 20yrs old with a Female:Male ratio of 2.3:1. The disease was more common on the left side with Left: Right ratio of 1.6:1. The success rate of the procedure was 90% which was statistically and clinically significant.

Key Words

Chronic Dacryocystitis, Dacryocystorhinostomy, Silicone Intracystic Implant

Introduction

Dacryocystitis is a common eye disease in ophthalmic practice (1). The condition is usually unilateral and occurs secondary to obstruction of the naso-lacrimal duct. Dacryocystitis usually affects two age groups- infants (congenital) and adults (acquired). Congenital dacryocystitis is almost always chronic, while acquired dacryocystitis may be acute, chronic or acute-on-chronic. Chronic dacryocystitis is more common than acute dacryocystitis. Dacryocystitis affects preferentially adults over middle life, being relatively rare in children and adolescents. The highest incidence is in the fifth decade, but it also occurs in advanced age (2). Majority of adult cases are found among those who do not maintain a proper hygiene.

Dacryocystitis occurs equally in both sexes in the newborn but its occurrence among adults is in the ratio of 3:1 with females outnumbering the males. The striking predilection for the females is due to a narrower lumen of the bony lacrimal canal which predisposes to obstruction (3).

Treatment of choice for Chronic Dacryocystitis is Dacryocystorhinostomy. Despite the fact that conventional DCR is the most preferred surgery, it still has certain disadvantages in terms of time and wider osteotomy. It also requires nasal packing pre-operatively. This procedure isn't recommended in children below 3 yrs of age. This procedure is contraindicated in cases having atrophic nasal mucous membrane and nasal bony

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Table 1. Showing Age, Sex Distribution and Laterality Of The Disease

Age Groups(YRS)	No. of Pts. (%)	Male	Female	Left	Right
20-30	04 (10)	01	03	01	03
31-40	06(15)	03	03	04	02
41-50	16(40)	05	11	10	06
51-60	11(27.5)	02	09	07	04
>60	03(7.5)	01	02	03	00

Table 2. Post Operative Follow Up of 40 Patients

Post-Op Follow Up	No of Patients	Symptoms	Results of Syringing	Percentage
3rd DAY	40	No symptoms in 38 patients	Patent in 38 patients	95
	40	Watering in 2 patients	Partially patent in 2 patients	5
1st WEEK	40	All 40 patients relieved of symptoms	Patent in all 40 patients	100
2nd WEEK	40	All 40 patients relieved of symptoms	Patent in all 40 patients	100
3rd WEEK	40	No symptoms in 38 patients	Patent in all 38 patients	95
	40	Passage of purulent discharge in 2 patients	Partially patent in 2 patients	5
1st MONTH	40	No symptom in 37 patients	Patent in 37 patients	92.5
	40	Watering in 2 patients	Partially patent in 2 patients	5
2nd MONTH	40	Watering with passage of purulent discharge in 1 patient	Partially patent in 1 patient	2.5
	40	No symptoms in 36 patients	Patent tract	90
3rd MONTH	40	Passage of purulent discharge in 3 patients	Non-patent tract	7.5
	40	Passage of purulent discharge with pain at the incision site in 1 patient	Non-patent tract	2.5
	40	No symptoms in 36 patients	Patent	90
	40	Purulent discharge in 4 patients	Non patent	10

abnormalities. There is a probability of failure of surgery due to osteum occlusion from membrane or synechia formation between the osteum and the middle turbinate.

To overcome these difficulties, a new technique called "Implant Dacryocystorhinostomy" was introduced in 1985 by Pawar and Sutaria, with the aim to obtain and maintain a patent passage between lacrimal sac and the middle meatus of the nose through the bony osteum. The success rate of implant DCR is about 96% (4). With this objective, the following study was planned as no such study has been conducted in J&K state.

Material and Methods

Nine months prospective study was conducted on 40 patients with chronic dacryocystitis who underwent dacryocystorhinostomy with silicone intracystic implant. The study was conducted on an out patient basis in the postgraduate department of Ophthalmology, Govt. Medical College, Jammu during the year 2010-2011.

The inclusion criteria for patients were cases having obstruction at naso-lacrimal duct only, patients agreeing to 3 months follow up and age >3yrs to 65 yrs. The exclusion criteria included patients having active

dacryocystitis, cases having block at canaliculi, and common canaliculi, fibrosed sac, gross nasal abnormalities like hypertrophied nasal polyps, nasal growth, atrophic rhinitis etc., any tumours or malignancy of the sac, uncontrolled hypertension, other causes of epiphora like lid laxity, ectropion etc., patients not agreeing to 3 months follow up, patients with bleeding disorders, patients with previous history of lacrimal sac surgery.

A detailed history pertaining to watering from eyes with relevant medical and surgical history was recorded. The patients were subjected to general physical examination to rule out any associated disease. A detailed ocular examination, Syringing and Probing to localize the site of obstruction, ENT checkup, Blood sugar (F), Bleeding and clotting time, Blood pressure, Plain X-Ray of orbit and paranasal sinuses was done. An informed and written consent was taken from the patients before their entry in to the study. Pre-operative antibiotic drops and oral antibiotics were given a day before surgery. 4% xylocaine was instilled topically three-four times, one hour before the surgery. Haemostatic injection was given to the patient intramuscularly half an hour before the surgery. All patients were operated using local anaesthesia (topical and infiltrative) using Lignocaine 2% with adrenaline 1:1000 using Pawar's technique (4).

Intracystic implant used, is made up of silicone elastomer providing maximum tissue compatibility and minimum thrombogenicity (Pawar intracystic implant manufactured by Surgiwear). The intracystic implant is sterilized by gamma rays and is supplied as gamma rays sterilized packet containing single piece. The procedure was conducted under local anaesthesia with Lignocaine 2% with adrenaline 1:1000, using Dr Pawar's technique (4). On discharge all the patients were kept on oral and topical antibiotics, anti-inflammatory drugs for 5 days and nasal decongestant for a period of one month. Post-operative syringing by normal saline was done on post op

day 3, 7, 15, 21 and then every month for 3 months as Out Patient Department procedure.

Statistical Analysis

Data was expressed as percentage:

Results

In this study, out of 40 patients, 35 patients had chronic dacryocystitis (87.5%), 3 had pyoceles (7.5%) and 2 had chronic dacryocystitis with lacrimal fistula (5%). 65% of the patients were younger than 50 years of age, the youngest being 20 years of age. The female to male ratio in this study was 2.3:1. The disease was more common on the left side with left to right ratio 1.6:1. The various complications that were encountered in this study include bleeding per-operatively (5%), Longer duration of surgery (7.5%), recurrence of symptoms (5%), pain at incision site (2.5%) and mild ecchymosis (100%). In 95% of the patients, the procedure was completed in less than 30 minutes. Failure of procedure was seen in 4 patients at 3 months of post-operative follow up (of which 2 had chronic dacryocystitis with lacrimal fistula and 2 had malplacement of implant).

Discussion

In this study 65% of the patients were younger than 50 years of age with peak incidence in the 4th decade (40%). Similar observation has been made by Chandravanshi *et al* (5) in the study. However in a study conducted by Reddy *et al* (6) peak incidence was in the 3rd decade. In our study disease was more common on the left side (62.5%). Similar observation has been made by Chandravanshi *et al* (5) where left side involvement was seen in 56%. Females outnumbered in this study (70% versus 30% male) with Female: Male ratio of 2.3:1. The striking predilection for the females is due to a narrower lumen of the bony lacrimal canal which predisposes to obstruction (3). Similar observation has been made by Pawar & Sutaria (4) Chandravanshi *et al* (5) and Reddy *et al* (6) in their studies where females

constituted 66.66%, 80% and 85% respectively. The original treatment of chronic dacryocystitis was extirpation of the lacrimal sac (dacryocystectomy). However, patients were not happy with this procedure, as watering of the eyes was not relieved despite cure of the infection. Today, the standard surgical procedures include conventional external DCR with a success rate of approx. 90% (7), endoscopic DCR with a success rate of approx. 85%, or endolaser DCR with a success rate of approx. 70%. Failures in DCR surgery are primarily the result of osteum occlusion from the membrane or synechiae formation between the osteum and the middle turbinate (8). Despite the fact that conventional DCR is the most preferred surgery, it still has certain disadvantages in terms of time and wider osteotomy. It also requires nasal packing pre-operatively. This procedure isn't recommended in children below 3 yrs of age. This procedure is contraindicated in cases having atrophic nasal mucous membrane and nasal bony abnormalities. There is a probability of failure of surgery due to osteum occlusion from membrane or synechiae formation between the osteum and the middle turbinate.

To overcome these difficulties, a new technique called "Implant Dacryocystorhinostomy" was introduced in 1985 by Dr. M.D Pawar with the aim to obtain and maintain a patent passage between lacrimal sac and the middle meatus of the nose through the bony osteum. He conducted his study on 1500 cases, out of which 50 cases belonged to congenital group and 1450 belonged to adult group.

In our study Dacryocystorhinostomy with silicone intracystic implant was done with a success rate of 90%. Success rate reported by various authors is as, 96% (4), 90% (5), 85% (6), 90% (9).

Conclusion

Success of the surgical procedure was defined as relief from watering of the eyes with no residual infection and patent passage on syringing. The present study thus concluded that DCR with silicone intracystic implant is a simple, less time consuming, less complicated and an effective surgical procedure for chronic dacryocystitis without disturbing the anatomical structures of the naso-lacrimal passage with an overall success rate of 90%.

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