AN EPIDEMIOLOGICAL STUDY ON PATIENTS UNDERGOING DACRYOCYSTORHINOSTOMY

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Abstract: *Dacryocystorhinostomy is performed in patients with naso-lacrimal duct obstruction to bypass the site of obstruction so as to relieve the patient of the irritating and socially embarrassing symptoms of epiphora. We discuss the various epidemiological aspects especially the vast difference by which the females out-number the males in patients undergoing DCR and the likely explanations for this difference in our study on 74 patients which underwent DCR in our institute.*

Keywords: *Dacryocystorhinostomy, epidemiological factors, naso-lacrimal duct*

INTRODUCTION:

Obstruction of naso-lacrimal duct causes the obstruction to flow of tears from the eye to the nose leading to the bothersome symptoms of epiphora. Epiphora is defined as the outflow of tears. The clinical spectrum of epiphora ranges from the occasionally bothersome trickle to the chronically irritating overflow. Epiphora is caused by a disruption in the balance between tear production and drainage. Those cases with obstruction to the outflow are amenable to an operation introduced in 1904 by a French Ophthalmologist Adeo Toti known as 'dacryocystorhinostomy' (DCR).¹

Abnormalities of tear drainage may be sub-divided into functional and anatomical. Functional failure is related to poor lacrimal pump function, which may be due to a displaced punctum, eyelid laxity, weak orbicularis or cranial nerve (7th) palsy. Anatomical obstruction may occur at any point along the lacrimal drainage pathway and may be congenital or acquired. Naso-lacrimal duct obstruction is of two types: primary or secondary. In 1986, Linberg and McCormick coined the term -primary acquired naso-lacrimal duct obstruction (PANDO) to describe a naso-lacrimal duct obstruction caused by inflammation of unknown cause that eventually leads to occlusive fibrosis.² Bartley proposed an obstruction, secondary acquired lacrimal duct obstruction (SALDO) based on the published cases. Secondary acquired lacrimal drainage obstruction may result from a wide variety of infectious, inflammatory, neoplastic, traumatic or mechanical causes. Bacteria, viruses, fungi and parasites have been implicated as the causes of infectious lacrimal drainage obstruction. Inflammation may be either endogenous like Wegener's granulomatosis, sarcoidosis and scleroderma or exogenous like eye drops, radiation, systemic chemotherapy and bone marrow transplant. Neoplasms may be primary growth, secondary spread or metastatic spread. Trauma may be iatrogenic or accidental. Mechanical lacrimal drainage obstruction may be due to intraluminal foreign bodies like dacryoliths or casts.^{3,4,5}

The present study was undertaken to understand the various epidemiological parameters relevant to chronic dacryocystitis amenable to DCR and is the first study of its kind from the hilly state of Himachal Pradesh involving patients

who underwent dacryocystorhinostomy (DCR) for naso-lacrimal duct obstruction.

MATERIAL & METHODS:

A retrospective study was conducted at ENT Department of Dr. Rajinder Prasad Govt. Medical College, Tanda, Kangra (HP) from the hospital records of patients who underwent DCR for epiphora from April 2003 to July 2005. A total of 74 cases of DCR were done which were analyzed for various epidemiological parameters like age, sex, socio-economic status and rural-urban distribution. Only those cases with primary naso-lacrimal duct obstruction were taken as study group and those with obstruction at or prior to common canaliculus (based on pre-operative clinical assessment and dacryocystography), noticeable lid-laxity, suspicion of malignancy, radiation therapy, bony or soft-tissue trauma were excluded from study.

RESULTS:

The results of the age-wise distribution of patients undergoing DCR are presented in Table I. Out of 74 cases undergoing DCR (n=74), maximum (n=51, 68.9 %) were above the age of 40 years. Table II shows the sex distribution of the patients undergoing DCR (n=74), majority 87.8 % (n=65) were females with males being only 12.1 % (n=9). 63.5 % of the patients were from low socio-economic status (n=47) while 31.1 % (n=23) were from middle class. Higher class constituted only 5.4 % (n=4) (Table III). Table IV shows the rural-urban distribution with majority, 86.5 % (n=64) being of rural background.

DISCUSSION:

Naso-lacrimal duct obstruction causes hindrance to the normal out flow of tears from the eye to the nose via naso-lacrimal passage thereby causing the overflow of tears (epiphora). In the present study, out of the 74 patients, 68.9 % were above the age of 40 years with maximum number (n=23) in the age group of 51-60 years. NLDO is more common in middle aged and elderly females. It has been suggested that the menstrual and hormonal fluctuations and a heightened immune status as factors that may contribute to the disease process⁶. These may explain the prevalence in the middle-aged and elderly females. Hormonal

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changes that bring about a generalized de-epithelisation in the body may cause the same within the lacrimal sac & duct. An already narrow lacrimal fossa in women predisposes them to obstruction by the sloughed off debris⁷. The present study showed that 87.8 % of the patients undergoing DCR were females with males forming a mere 12.1 %, which is a significant difference. Similar reports have been given by other authors giving a significantly higher proportion of females undergoing DCR than males. Yung & Hardman-lea in their study of 170 patients undergoing DCR found 68 % being females & 32 % males⁸. Sharma et al in their study of 263 patients undergoing DCR found 72 % being females & 28 % males⁹. Of the 143 patients undergoing DCR in a study by Ben Simon et al, 95 were females & 48 were males¹⁰.

Various authors in their studies have pointed to various factors for higher incidence of DCR in females compared to males ranging from socio-economic factors to anatomical factors. Females were affected more than males, may be due to the inferior sex status of females in our country leading to poor hygiene. Groessl SA et al in their study of axial maxillo-facial CT scans showed women having a smaller bony diameter at the level of lower fossa and middle naso-lacrimal duct compared to men. The adult inferior bony fossa increased in size with age in both men and women, while middle naso-lacrimal duct increased in size in men only⁷. Jansen A G et al used axial CT to measure the minimum diameter of bony naso-lacrimal canal and found a significant difference between mean diameter in males & females (3.70 mm in males compared to 3.35 mm in females)¹¹. Rural-urban difference can be because of our institute having a vast rural population as its patient population & also because of the low general socio-economic condition of the rural population in the area.

CONCLUSIONS:

Dacryocystorhinostomy is performed in patients with epiphora with females out-numbering the males & forming the majority of patients undergoing DCR for naso-lacrimal duct obstruction. The higher incidence of females undergoing DCR has been attributed to the social as well as anatomical factors as anatomical studies of the naso-lacrimal system by radiological means have shown that the dimensions of the naso-lacrimal system are smaller in females than males

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Table I : showing age-wise distribution of patients undergoing DCR

S. No.	Age-group in years	No. of cases	Percentage (%)
1	0 -10	-	-
2	11 - 20	01	1.3
3	21 - 30	07	9.4
4	31 - 40	15	20.3
5	41 - 50	18	24.3
6	51 - 60	23	31.0
7	61 & above	10	13.9
Total		74	100

Table II : showing sex-wise distribution of patients undergoing DCR

S. No.	Sex	No. of cases	Percentage (%)
1	Male	09	12.1
2	Female	65	87.8
Total		74	100

Table III : showing socio-economic status of the patients undergoing DCR

S. No.	Socio-economic status	No. of cases	Percentage (%)
1	Lower	47	63.5
2	Middle	23	31.1
3	Upper	04	5.4
Total		74	100

Table IV : showing rural-urban distribution of patients undergoing DCR

S. No.	Rural/Urban	No. of cases	Percentage (%)
1	Rural	64	86.5
2	Urban	10	13.5
Total		74	100

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NEWS AROUND

The Annual Conference of the Association of Pediatric Otolaryngology of India 2007

The Annual Conference of the Association of Pediatric Otolaryngology of India will be held in Downtown Hospital, Guwahati, on 17th and 18th March, 2007.

Prof Oded Nahlieli is the Guest Speaker to demonstrate a "Live Surgery"

For further details please contact : Dr. N.N. Dutta, CMD, Downtown Hospital, G.S. Road, Guwahati, Assam. Contact No. : 0361-2331003, 2331824 (Fax)

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The Annual Conference of the Association of Phonosurgeons of India (APSI) PHONOCON -2007

The Annual Conference of the Association of Phonosurgeons of India -Phonocon will be held on **3rd January 2007** at Bhubaneshwar.

The venue of the Conference is Hotel Suryansh, Bank Street, Jaipur Road, Bhubaneshwar.

For details contact : **Prof. Phaniendra Kumar, President -APSI**, Mobile : 098481-3408 ; Email : drvoicep@hotmail.com

CORRIGENDUM

This is to inform that the List of Authors in the Article published in April-June , 2006 Volume 58 Edition of IJOHNS, page No. 202, with Title- '**Hypohydrotic Ecyodermal Dysplasia- A Rare Cause of Childhood Atrophic Rhinitis**' should be corrected to read as "S. Das Gupta, S.V. Joshi, Kanchan Lanjewar, Neeraj Murkey."

This is to inform that the List of Authors in the Article published in Special Issue (35/2004) IJOHNS, page Nos. 179-181, with Title- '**Visual deterioration after trans-sphenoidal surgery for pituitary adenoma- a rare severe complication: case report with review of literature**' should be corrected to read as "Bansal K.K., Varshney S., Gupta C, Kukreti R. Gupta A."

This is to inform that the List of Authors in the Article published in July-September 2006 Issue, IJOHNS, page Nos. 239-240, with Title- '**Role of Technetium 99m Scan in Detecting Residual Thyroid Disease**' should be corrected to read as "K. Dinesh Kumar, D. Sri Prakash" as co-authors.