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RESEARCH ARTICLE

EXTERNAL DACRYOCYSTORHINOSTOMY IN PAEDIATRIC AGE GROUP: INDICATIONS AND OUTCOME RESULTS

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Abstract

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Introduction:-

Nasolacrimal duct obstruction (NLDO) can be congenital or acquired. Congenital obstruction of the lacrimal drainage system is usually caused by a membrane blocking the valve of hasner at nasal end of NLD . Congenital NLDO include nonsurgical and surgical management. Epiphora affects ~20% of neonates, but spontaneous resolution occurs in 96% of the children within the first 12 months. For unresolved epiphora, probing is a successful procedure with a high cure rate, although with increasing age that success rate is reduced. Treatment with probing leads to excellent outcomes in simple obstructions of Hasner valve; in contrast, it is highly unsuccessful in obstructions at the lacrimal sac– lacrimal duct intersection, which is prevalent in older children. Persistent epiphora following probing, more invasive management is required like external dacryocystorhinostomy (DCR)

Purpose

To study the indications and surgical outcome of external dacryocystorhinostomy in the paediatric age group from 7 to 15 years

Material and Methods:-

A retrospective , interventional case series of 10 children in age group from 7 to 15 years of age who underwent an external DCR over 5 years period from march 2018 to march 2023

Inclusion Criteria

- Children with persistant epiphora age group of 7 years to 15 years
- Minimum follow up of 3 months
- Positive Roplas test

Exclusion Criteria

- Acute dacrocystitis
- Any nasal pathology
- Unwilling patients

All surgeries were performed under general anaesthesia . The technique used was as per standard protocols of external DCR¹

Outcomes were assessed according to two criteria:

1. Subjective resolution of symptoms

2. Patency on sac syringing

Results:-

A total of 10 children aged 7 to 15 years underwent external dacryocystorhinostomy (DCR) during study. The mean age of patients was 11.2 years. The overall male to female ratio in all patients was nearly 6:4 . The indications for surgery were persistent epiphora after probing in the past or not taking any treatment .

The overall success rate in all patients was 90%. Out of 10 children who underwent DCR , 9 children had complete resolution of epiphora and discharge , while 1 child had partial resolution .

There were no major complications observed during or after surgery . One patient had mild postoperative bleeding and two patients had mild swelling , which was managed conservatively . None of patients had any evidence of infection or other complications

Age (YRS)	No. of children	Percentage
7-9	3	30%
10-12	4	40%
13-14	3	30%

Sex	No. of children	Percentage
Male	6	60%
Female	4	40%

	No. of children	Percentage
History of probing present but failed	7	70%
Not taken any treatment	3	30%

Complications	No. of children	Percentage
Swelling or edema	2	50%
Bleeding	1	25%
Failure (Partially patent)	1	25%

Follow up	No. of children	Percentage
Day 1	10	100%
1 Week	10	100%
3 Month	7	70%

Discussion:-

Paediatric DCR is technically challenging as space available is less , and hence manoeuvring of instruments get difficult.

The vertical height of the nasal cavity is smaller in children; hence, the skull base is a lot closer as compared to the adults, which demand precision understanding of anatomy.

The bones in children are soft and elastic. The wound closer should aim at minimal or no scarring.

The anatomical boundaries are also in much more proximity which increases the risk of their violation¹⁻⁹.

Hakin et al.² reported 177 children with nasolacrimal duct obstruction but without concurrent canalicular disease. A high success rate of 96% was achieved (171/177). The success of Ext DCR dropped to 79% in those children who had associated canalicular disease. They concluded that Ext DCR in paediatrics is a safe procedure in experienced hands with a high success rates, especially in cases without associated canalicular disorders

Barnes et al.³ reported their outcomes in a large series of 134 Ext DCR's in 121 children with 10 patients having associated systemic anomalies. Intubation was performed in only 20% of the patients. A high success rate of 96% was reported. There were no immediate post-operative complications and only three cases of pre-septal cellulitis and one case of suture granuloma, which were conservatively managed. Based on their large series, they concluded that paediatric Ext DCRs can be performed without any significant morbidity on a day-care basis.

Dhiman et al.⁴ investigated their paediatric epiphora patients and reported a 79% success rates in 43 patients who underwent an Ext DCR with intubation.

Shrestha et al.⁵ reported 38 paediatric patients with nasolacrimal duct obstructions of various aetiology and noted a high success rate of 97% following an Ext DCR.

The limitations of the current study include its retrospective nature, lack of long-term outcomes and small sample size. However, the strengths of the study are a large single-centre data and uniform surgical techniques other than the use of adjuvants

Conclusion:-

External DCR yielded good results with minimal complications regarding epiphora in children. Though it can be done safely in children it needs meticulous planning but there is always risk of general anaesthesia and effects of anaesthetic drug

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