



METHYLENE BLUE DYE FOR GUIDING RESECTION OF NASAL DERMOID SINUS CYST IN INDIAN PEDIATRIC PATIENTS

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ABSTRACT

Congenital midline nasal masses include nasal dermoid sinus cysts, encephaloceles and gliomas. They are rare malformations, of which dermoid cyst is an incredibly not unusual congenital abnormality. The purpose of the take a look at is function of methylene blue dye for guiding resection of nasal dermoid sinus cyst in pediatric sufferers. A prospective study of 10 instances of nasal dermoid cysts and sinuses identified clinically and radiologically, were efficaciously dealt with by using an outside rhinoplasty approach in teaching hospitals. There turned into one recurrence after 6 months with a successful entire resection with revision outside rhinoplasty. All patients were followed up for a mean of three hundred and sixty five days submit operatively. The methylene blue dye has the capability to reduce surgical trauma and decorate achievement charge. The method wishes to be explored in a larger series.

Key words: Dermoid, Intracranial, Nasal dermoid sinus cyst and Methylene blue.

INTRODUCTION

Congenital nasal dermoid and sinus cysts (NDSCs) are infrequent congenital malformations, not commonly determined in clinics. They are the most general type of congenital nasal midline lesions. Other types consist of nasal meningoencephaloceles and gliomas. The occurrence of dermoid cysts and fistulas inside the midline of the nose is 1 in 20,000 -40,000. Usually NDSCs represent approximately 11% of dermoid cysts in the head and neck, 1% of dermoid cysts in the entire body and 61% of median lesions in children.¹

The major features of NDSCs are fistula orifice is located at the median line of the nostril, from time to time the fistula orifice may be located on the median line of the face among the eyebrow and nasal columella, and once in a while there is a 2nd fistula within the internal canthus. The fistula affords as a needle-like orifice with white cheese-like substance or first-class hair discharged after extrusion.²

The cyst offers as an elastic round mass at the median line of the nostril; both dermoids and cysts ought to occur again and again following infection; severe sufferers

may even be complicated by meningitis, cellulitis, osteomyelitis, cerebrospinal fluid leakage, frontal abscess, and dead bone formation; inward boom of the lesions can attain the nasal bone or nasal septum cartilage; intracranial invasion is located in 20% of patients, while few sufferers can present with widening of the orbital area. Diagnosis is made based on the symptoms and signs and computed tomography (CT)/magnetic resonance imaging (MRI) examination. Here we express an effective surgical approach involving intraoperative visualization of the sinus track with methylene blue (MB) dye to facilitate complete resection and reduce the incidence of recurrence.

METHODS AND RESULTS

Six kids diagnosed with NDSC were dealt with in our health center. Informed consent was acquired from the patients' parents to use affected person records in this look at. The studies program turned into authorized by using the Ethics Committee of Annai medical college, Chennai, Tamilnadu.

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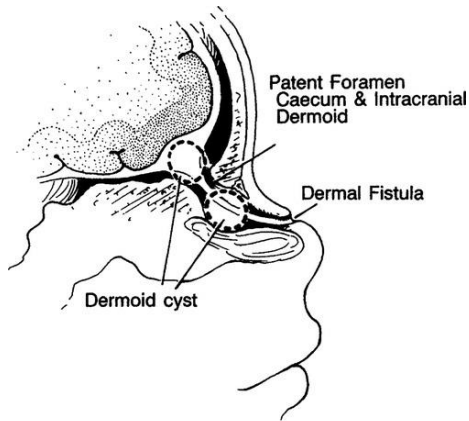


Figure 1. Mid face Anomalies in Children

All patients observed with a swelling over nasal dorsum of few days period. They had a pit over dorsum of nose, considering delivery, from which occasionally greyish, tacky, sebaceous fabric changed into expressed, for which scientific attention changed into by no means sought. There turned into no records of nasal infection or abscess.

The swelling was non gentle, easy, diffuse, globular, not adherent to pores and skin, the deeper margins were insinuated between the nasal bones. There have been no signs of inflammation. A midline punctum turned into cited. A provisional prognosis of NDSC was made. Contrast greater computed tomography (CECT) of head and neck became carried out. CECT experiment detected a small extent of fluid alongside the nasal dorsum. There became no evidence of bony erosion along anterior cranial fossa and crista galli seemed to be regular for the age.

Patients had been deliberate for excision of the NDSC. Written consent for pictures, for booklet of pictures and for surgery became taken. Neurosurgeon turned into kept on standby in case the tune prolonged intracranially. The patient turned into taken below wellknown anaesthesia. Sinus music became cannulated using 24 G cannula (Figure five). 0.2 mL methylene blue dyes become injected through the cannula. A vertical elliptical incision become given around the punctum and prolonged toward the sinus track. Careful sharp dissection turned into performed across the song. 1.2 centimetre sinus tune changed into excised in toto.

After excision, no dye changed into seen in the field. There changed into open roof deformity inside the nasal bones. A percutaneous osteotomy of nasal bones became carried out. Layered closure of the incisions became done. Wound healed well without any complications. The excised tissue turned into dispatched for histopathological examination, which showed the prognosis of NDSC. The affected person is in our observe up for more than one years now and there has been no recurrence.

DISCUSSION

Congenital inclusion dermoid cysts are thought to arise during the third and fifth week of embryogenesis from displacement of germ cells.³ The initial position of ectodermal inclusion within the underlying mesoderm corresponds to the varied arrangement of craniofacial dermoid cysts.⁴ Nasal dermoid cysts are commonly rare congenital lesions in children with delayed onset of presentation. Cruvelier et al first reported a nasal dermoid cyst. Different terms used to describe the lesion-dermoid, dermoid sinus, dermal cyst-brought about confusion. Sessions coined the time period NDSC to encompass all lesions containing ectoderm and mesoderm placed within the nose.⁵

The prenasal principle, by Grunwald attempts to explain the development of NDSC. Between 4 to 8 weeks of gestation, fonticulus frontalis separates nasal and frontal bones, and a prenasal area separates the nasal bones and cartilage. A diverticulum of dural mater extends from the anterior cranial fossa through the foramen caecum into the prenasal area. It touches the pores and skin of the nostril in brief and fast involutes.⁶ The nasal and frontal bones fuse, obliterating the fonticulus frontalis. Finally, the foramen caecum is full of fibrous tissue.

NDSC occurs whilst skin is pulled at the side of the regressing dural diverticulum. A sinus tract may additionally shape everywhere alongside the direction of the diverticulum. Frequency of intracranial connection have been variably stated by way of Rubayi S (19%).⁷

The possibility of a transcranial extension necessitates a radical radiographic assessment by way of CT and magnetic resonance imaging (MRI). It became believed that CT findings of wide foramen caecum and bifid crista galli, are suggestive of intracranial extension. A wide variety of false high-quality findings led Penslar to check the radiographic pictures and finish that an enlarged foramen caecum and a bifid crista galli did now not continually correlate with intracranial extension.⁸ However, a everyday foramen caecum and crista galli truly policies out intracranial ailment.

On T1 weighted pics of MRI, NDSC seem hyperintense. It must be distinguished from the intraosseous fat deposition of crista galli that takes place with everyday maturation in maximum children, by means of age of five years. When there's a dorsal ostium, a vertical elliptical incision has been preferred by means of Rahbar, which we too, have used. Intracranial extension must be assumed until confirmed otherwise. Incomplete resection is related to meningitis and recurrence in up to 15% of instances.

Sessions and Penslar recommended that craniotomy can be avoided if there's simplest fibrous song on the cranial base. An epithelium covered track would be stained with the aid of MB dye and revealed; while a fibrous track could no longer. Thus we used the dye as a device to manual dissection.

A try to find other surgeons too used the approach for comparable indications. Phalen, et al.⁹Determined that during about 20% of their cases, preoperative imaging was not constant with intraoperative findings, and they used MB to delineate the volume of dermoid cyst. Verma and Saha¹⁰also used MB to facilitate dissection of the dermoid sinus. Histological examination of frozen sections of the tissue from base of tumor to stumble on dermal factors, is another method to determine completeness of resection.

MB is usually used for tissues dissection, stain cysts, sinuses, and ulcers of pressure sore, pilonidal sinus, and ganglio. MB stain is extensively utilized to assumed cancerous tissues of the uterus, cervix, oral hole space, liver, and colon. It has become the primary synthesized

drug used for treating malaria [15]. MB has been used to facilitate the elimination of with the aid of accident embedded metallic foreign places our bodies in children.¹¹The dye is cheaper and broadly available. The time and labour delivered to the surgery is some distance outweighed by way of the advantages of entire resection.

CONCLUSION

NDSC is a rare congenital lesion, which often poses diagnostic and surgical dilemma. Degree of surgery is guided by the sinus track and an intracranial approach may be needed. The dye has the capability to reduce surgical trauma and enhance fulfillment price. The method needs to be explored in a bigger series.

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