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An Unusual Cause of Vomiting in Childhood: A Case Report

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ABSTRACT

In infants and young children, vomiting is a common symptom that may indicate a digestive or other health problem. This case report presents a rare incidence in which an intracranial tumour was the root cause of an infant's vomiting and failure to thrive. An intracranial tumour was found during the evaluation, which also evaluated acute gastroenteritis, reflux illness, and milk protein intolerance. Considering unusual etiologies, such as metabolic, endocrine, and neurological disorders, is crucial for determining the cause of symptoms like chronic vomiting and stunted development in infants, as shown by this instance. The best possible results for patients depend on their ability to benefit from early diagnosis and treatment.

Keywords: Unusual cause of vomiting, Infant, Childhood, Intracranial tumour, and Failure to thrive.

INTRODUCTION:

Brain stem gliomas are children's third most prevalent kind of brain tumour, accounting for 10%-15% of all cases (Rahman *et al.,* 2023). Several neurological symptoms, such as cranial nerve palsies (52%), irritability or lethargy (50%), vomiting (26%) and ataxia (49%), are common in patients with these tumours (Bos *et al.,* 2002; Nikam *et al.,* 2022). Notably, as observed in this case report involving a 20-month-old newborn, appear as recurrent vomiting and failure to grow. Conventional explanations and therapies failed, leading to the identification of an intracranial ependymoma.

Evidence of increased intracranial pressure may not become apparent until late in the clinical course, often coinciding with substantial tumour growth capable of obstructing vital cerebral pathways, as seen in this case. Therefore, making early recognition and intervention is important to optimize clinical outcomes in neonates and young children facing such challenging conditions.

Case presentation

A 20-month-old child, one of the twins, was born prematurely and presented with chronic non-bilious vomiting. The episodes of vomiting were at first infrequent but quickly became more frequent. At the same time, the child's development and weight increase were unsatisfactory. Cow milk intolerance and gastro esophageal reflux disease were considered to solve these problems. Proton pump inhibitors and a highly hydrolyzed formula were two interventions used. Unfortunately, there was no noticeable progress made despite these attempts. The child was 8.3 kilograms (0.4^{th} percentile) and 82 centimetres in height (9^{th} percentile) when evaluated at 20 months. Both the physical examination and the baseline blood work came out normal. Neither a barium swallow nor an abdominal ultrasound detected any evidence of a hernia or reflux. Endoscopic examination of the upper digestive tract diagnosed mild gastritis. A magnetic resonance imaging (MRI) of the brain was performed because of the unresolved mystery of vomiting, and the results showed

the presence of a heterogeneous lesion in the midline of the posterior fossa. Hydrocephalus deve-loped because the lesion reached the fourth ventricle. The child had a ventriculostomy, tumour removal, and posterior craniotomy. The diagnosis of ependy-moma was made by the histopathology. After that, imaging tests showed a clear mass lesion in the fourth ventricle. The hyperintense signal was seen on T2-weighted images, and contrast imaging showed consistent the peripheral enhancement. The lesion caused anterior brainstem and posterior vermis com-pression (**Fig. 1**). The child's recovery after surgery went off without any problems. Radiation treatment is being used to treat the patient's remaining tumour.

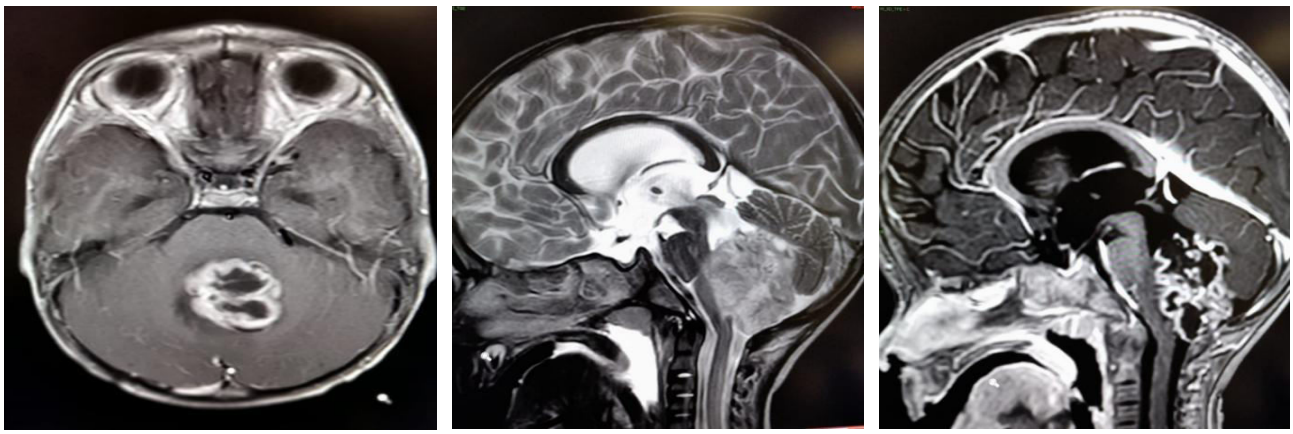

Fig. 1: MRI demonstrating midline posterior fossa lesion, hydrocephalus, ependymoma, and fourth ventricle mass compressing brainstem and vermis.

DISCUSSION:

This case report presents an intriguing and unusual scenario in which an intracranial tumour was sus-pected of causing an infant child's persistent the vomiting and failure to grow. This instance illus-trates the difficulty of determining the underlying aetiology of GI symptoms in infants. Improvement in symptoms following partial excision of the brainstem glioma suggests that the tumour was the cause of the gastrointestinal problems rather than a separate condition. This observation is consistent with previous reports that infiltrative brain tumours might impair oesophagal motility (Bilaniuk *et al.,* 1980; Hoffman *et al.,* 1980; Solomon *et al.,* 1969). Particular focus is placed on the swallowing process in studies of the pathophysiology of gastrointestinal disturbances.

The pontomedullary junction, the brain region and responsible for swallowing, orchestrates a compli-cated interaction of the impulses involving several cranial nerves. Inadequate responses in neonates and babies, difficulty in pushing food, or regurgitation might result from sensory or the motor innervation disruptions, which can affect different phases of deglutition. Abnormal function of lower the oeso-phagal sphincter and other gastrointestinal muscles and sphincters may occur from impaired innervation (Weisbrodt, 1976; Sharif *et al*., 2019).

Ganglia, axons, the vagus nerve, and sympathetic fibres all contribute to the complex innervation of the oesophagal wall. Both animal studies and human research have shown that disruptions in these networks lead to oesophagal dysmotility and gastro-esophageal reflux (Wood *et al.,* 1985). The case study also highlights that higher intracranial pressure may cause vomiting in patients with posterior fossa tumours due to abnormalities in vestibular function, cerebellar malformations, or the intrinsic brainstem lesions. Brain lesions may cause vomiting unrelated to gastrointestinal motility because emetic trigger sites are connected to cranial nerves and spinal cord cells. Complications might be made worse by the coexistence of neurological disorders and GI motility issues.

Regular neuro diagnostic evaluations, such as CT scans and MRI investigations, are indicated for juvenile patients presenting signs of growth failure to avoid delayed diagnosis and intervention. This kind of care is essential because situations like these might develop into brainstem gliomas. To enhance patient outcomes, early diagnosis is crucial so that timely treatment actions may be performed. In con-clusion, this case report highlights the significance of exploring uncommon causes of pediatric patients' vomiting and failure to thrive. It emphasizes the

necessity for a thorough examination and inter disciplinary teamwork in handling situations with neurological disturbances and gastrointestinal symptoms.

CONCLUSION:

One of the most common signs of illness in children is vomiting. When gastrointestinal causes have been ruled out, looking at less prevalent reasons such as metabolic, endocrine, and neurological problems is necessary. Brain tumors are the most common juvenile cancer, making up about 20% of all cases except leukaemia. Ependymomas rank third most often among malignant intracranial neoplasms in the pediatric population. While most instances will show neurological symptoms, it is important to highlight that sometimes children may only show indications of an underlying cerebral tumour, such as non-specific, chronic vomiting and failure to grow.

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CONFLICTS OF INTEREST:

The authors declare no potential conflict of interest

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