



ORIGINAL RESEARCH PAPER

ENT

IMPACTED BUTTON BATTERY MASQUERADING AS RECURRENT EPISTAXIS IN AN CHILD .

KEY WORDS: Epistaxis, Button battery, nasal foreign body

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ABSTRACT

Epistaxis in children is one of the most common referral dealt by an ENT outpatient department .Here we report a case of a 2-year-old girl who presented with complaints of recurrent episodes of epistaxis and discharge from the right nasal cavity since 1 month duration. Endoscopic examination of the right side of nose revealed a button battery impacted between the inferior turbinate and the cartilaginous portion of nasal septum.

INTRODUCTION

Epistaxis is rare in children younger than 2 years (approximately 1 per 10,000)[1,2]. Trauma (intentional or unintentional) or serious illness (e.g., thrombocytopenia) need to be considered [1,2]. Young children are curious and may insert foreign bodies in the nose, ear or aero-digestive tract. Trauma induced by a foreign body embedded in the nose should always be considered in differential diagnosis in a child presenting with unilateral epistaxis, nasal obstruction and nasal discharge.

Case Report

A 2-year-old female child was brought to the outpatient department by her grandmother with complaints of recurrent episodes of epistaxis, pain and foul smelling discharge from the right nasal cavity since 1 month duration. The child had been seen earlier at a primary health care facility, where she was prescribed neosporin ointment whenever there was an episode of epistaxis. On examination redness, swelling and tenderness was noticed over the right nostril. On anterior rhinoscopy examination of the right nasal cavity, the inferior turbinate was angry looking and ulcerated with crust formation which obscured further view. We ordered an X-Ray PNS waters' view, which revealed a round looking radio opaque object in the right nasal cavity, abutting the nasal septum (Figure 1). As the object demonstrated a "double rim" effect on X-Ray, we suspected it to be a button battery. We admitted the child and performed an endoscopic exploration of the right nasal cavity under general anaesthesia. Endoscopic examination of the right nasal cavity revealed a button battery impacted between the inferior turbinate and the cartilaginous portion of nasal septum. The button battery had rust deposits and was measured to be 10 mm in diameter after removal (Figure 2).The mucosa of the inferior turbinate and the nasal septum had ulcerations and crust formation. However, there was no septal perforation. A thorough irrigation with normal saline was done. We started the child on oral co -amoxiclav and analgesics which were given for a period of 1 week. After the procedure, the episodes of epistaxis stopped. At 2 weeks follow up, the ulcerations of the nasal mucosa had healed up completely.

DISCUSSION

Foreign bodies impacted in the nose are common in the age group between 2 and 5 years age. Children of this age are curious and tend to accidentally introduce common household objects into the nose, ear or aero-digestive tract. Various kinds of foreign bodies have been reported in the nasal cavity which range from food items like peas, nuts, corn, etc, to small objects like plastic toy parts, beads, jewelry pearls, foam, paper or cotton. With the increasing use of electronic items at home, the use of button batteries have increased in the recent years. These batteries are commonly used in watches, small remote controlled toys and others items. The first reported case of a button battery foreign body was in 1977 and involved a child who swallowed a camera

battery, which lodged in the proximal esophagus [3]. In a 20 year retrospective data review of nationally representative sample from USA, the average annual battery-related emergency department (ED) visit rate was 4.6 visits per 100000 children [4]. The mean age was 3.9 years and button batteries were implicated in 83.8% of the cases .Battery ingestion accounted for 76.6% of ED visits, followed by nasal cavity insertion (10.2%), mouth exposure (7.5%), and ear canal insertion (5.7%).

Different types of commonly used batteries are manganese, silver, mercury, lithium, and zinc. The majority of button batteries today are of the alkaline variety [5]. Four mechanisms of injury have been suggested [6, 7]. Firstly, leakage of the battery contents causes direct corrosive damage. In vitro studies have shown that spontaneous leakage of electrolyte solution occurs when alkaline batteries are exposed to moisture. The leaked alkaline electrolyte solution can penetrate deeply into tissues producing a liquefying necrosis .Secondly, direct electrical current effects can result in nasal mucosal burns. Thirdly, prolonged local pressure on the tissue can result in pressure necrosis .Finally; local toxic effect due to absorption of substances can cause injury.

Symptoms and signs of nasal foreign body ranges from nasal irritation, pain and burning sensation in the nose, foul smelling nasal discharge and epistaxis. Button batteries may produce mucosal ulceration and septal ulceration within a few hours of impaction [8]. Long term complications of impacted button battery include saddle deformities, atrophic rhinitis, septal perforation, alar collapse, nasal/choanal stenosis [9, 10]. The present case presented almost 1 month after the impaction of the foreign body and had mucosal ulceration, crusting and epistaxis. Fortunately there was no septal perforation or deformity. Button batteries can be diagnosed if a proper X-ray with adequate exposure is taken. Button batteries have a bilaminar structure, making them appear as a double ring or halo on anteroposterior view and a step-off at the separation between the anode and cathode on lateral view [10].

A high index of suspicion of accidental foreign body impaction in case of a small child complaining of unilateral epistaxis with nasal obstruction, discharge or pain and discomfort remains the key to early detection. A thorough history taking, recognition of characteristic radiological features and urgent nasal endoscopic removal of under general anesthesia can prevent serious complication in such cases. Clinicians need to educate parents for safe handling and disposal of button batteries to prevent accidental nasal insertion or ingestion.

Ethical Approval:

The study was performed in accordance with the ethical standards of the institutional research committee and with the

1964 Helsinki declaration and its later amendments or comparable ethical standards.

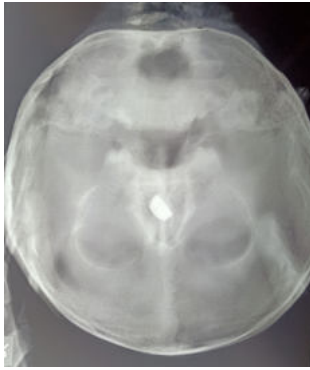


Figure 1:X-Ray PNS water's view shows radio opaque object in the right nasal cavity. A "double rim" or halo effect is visible



Figure 2: Button battery after removal from the right nasal cavity

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