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Aim: is to report the experience of the pediatric resuscitation service in the management of these coins ingested at the EHU Oran.

Material-Methods: A prospective study from 01/01/2018 to 10/12/2019 was performed in the pediatric resuscitation department. Any child who has ingested a coin is referred to the 0RL department for an endoscopic exploration.

A front and side cervical x-ray is taken to visualize the EC. The children were explored by a rigid endoscope under halogenated anesthesia and sedation by propofol in spontaneous ventilation and without trachéal intubation

Keywords: *coin, child, digestive endoscopy.*

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Ingestion of Coins in Children in Pediatric Intensive Care Unit: Our Experience in Emergency Care at EHU Oran

Sid Ahmed Bakri [α], Houcine Sadok [σ], Dalila Boumendil [ρ], Djilali Batouche [ω] & Djamila-Djahida Batouche [¥]

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Results: 35 foreign bodies (coins) ingested by the children were taken care of. Our children are divided into 19 boys (54,28%) and 16 girls (45,7%) with an average age of 25 months ± (extreme 7 months-120 months). 85,7% of children were asymptomatic and 100% of children were explored; coin extraction was possible in 98.16% of the cases, without any complications

Conclusion: The endoscopic extraction of the coin from the upper digestive tract is harmless and effective

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I. Introduction

Ingestion of coins is an accidental situation frequently encountered in the pediatric population. In most cases, the ingestion remains without clinical consequences and the extraction of the EC requires a rigid endoscopy.

II. Material - Methods

We conducted a prospective study from 1/1/2018 to 10/12/2019. All children who have ingested a coin are referred to the ORL service of EHU Oran, which calls the pediatric resuscitation anesthesia service for a instrumental exploration, in an anesthetic environment. After having visualized the EC by a frontal and lateral cervical X-ray, the children are then admitted to the emergency unit, after observing a fast before exploration and a consent signed by the parents.

Sedation at the time of endoscopy is systematic in all children. Extraction is possible after halogenated anesthesia with a facial mask, and sedation performed by injection of propofol 3 mg / kg, fentanyl 1 gamma/kg (this attitude depends on the experience of the operator. The material used is a laryngoscope rigid, claw clips, "crocodile" clips.

If endoscopic exploration does not visualize a foreign body, an uninhabited abdominal x-ray (ASP) is performed in the recovery room.

The explored children are monitored 2 hours after the digestive endoscopy and then redirected to the ORL department.

III. Results

In one year we collected 35 cases of coin ingestion. Our children are divided into 19 boys (54,28%) and 16 girls (45,7%).

The average age of the children is 25 months (extreme 7 months-120 months), with a peakage frequency observed at 36 months and 5 years (fig. 1).

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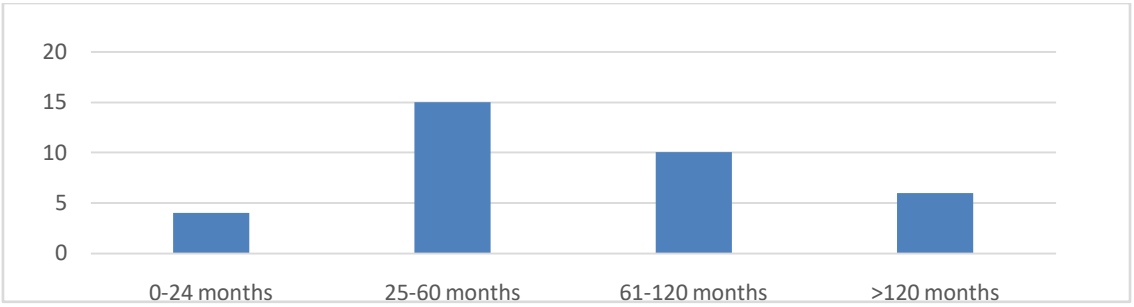
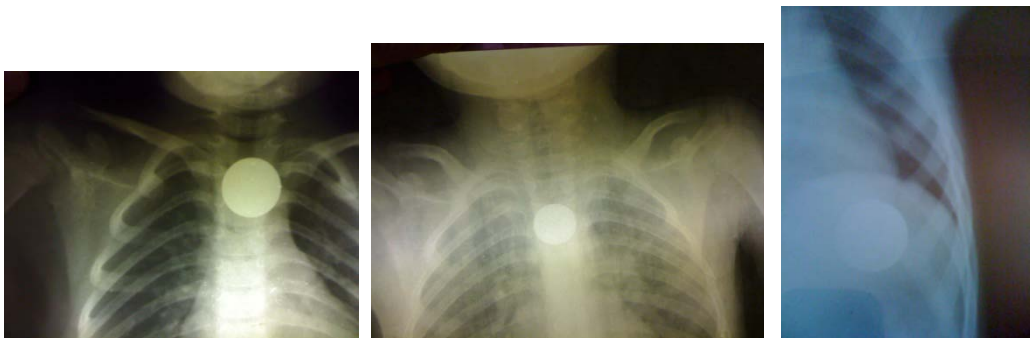


Fig. 1: Graphical breakdown representing the workforce by age expressed by age class in months

The average time for taking charge is 19.14 ± 0.729 hours; the children are oriented from different wilayas of central and western Algeria. All the children had no particular antecedents except two ashtmatic under treatment.

Ingestion was asymptomatic in 30 cases. It was followed by a hyper sialorrhea in 01 cases, a swallowing gene with vomiting in 2 cases and dysphagia in 2 cases. The clinical examination was unremarkable in all children.

Front and side cervical radiography visualized the presence of a foreign body (coin) at the upper part of the esophagus in 28 children (80%), at the middle part of the esophagus in 05 cases (14 , 2%) and twice the foreign body was in the distal esophagus. (Fig. 2)



(a) (b) (c)

Fig. 2: Location of the coin in different place of the esophagus: (a) upper part of the esophagus, (b) middle esophagus, (c) location of the part in the stomach



Fig. 3: Different types of coins

The part was extracted on the 1st attemptin 80.6%, on the second attemptin 11.3% and on the third attempt in 1.6% of the remaining cases. The median extraction time for the coin was 1 minute, ranging from 35 to 80 seconds, the median duration of sedation was 10 minutes. No complications related to endoscopic treatment were observed. Or even the anestheticact. All the children were monitored for 02 hours in the recovery room and redirected to the ENT service. The children whose EC was viewed at the ASP had benefited from the control ASPs performed at the ENT service, remotely from the acute episode and which showed the progression of the EC along the digestive tract until its expulsion by natural way.

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IV. Discussion

The ingestion of coins is a frequent accident in children, with banal clinical consequences [1] and easily removed by endoscopy. [2]

The coins represent the foreign body (CE) most often encountered in children. [3 –4] with a peak frequency between 6 months and 6 years old [3.5]. In a series that analyzed 320 esophageal CEs, they were coins in 83.8%. Ingestion occurred when children played in the presence of an adult in 85.3% of cases [6]. Almost all of the ingestion in children under the age of 5 did not go unnoticed in our study. 76% of our children were asymptomatic on admission, there was no significant difference between room size and clinical sign on admission ($p = 0.478$).

The passage of CE of less than 2 cm in diameter is generally easy through the esophagus. On the other hand, CE of 2 cm in diameter can be more easily impacted during their progression in the digestive tract with a risk of obstruction and perforation which is then increased, which justifies their endoscopic extraction. Other blocking sites are the pylorus, duodenum, Treitz angle, Meckel's diverticulum, ileocecal valve, appendix and recto-sigmoid hinge. The EC located at the upper third and at the middle third of the esophagus must be removed as soon as possible, because they are blocked, either at the cricopharyngeal ring or at the aortic arch, which are areas at risk of complications. [1] [6]

In the event of a delayed diagnosis, several complications can arise such as: esophageal ulcer, esophageal stenosis [7], esotracheal fistula [8].

The most frequent location (95%) is the cervical esophagus under the cricopharyngeal muscle [9, 10], it was observed in 81% in our study, and justifies instrumental extraction. Several attitudes have been described in the literature to allow this extraction. This is the use of the Magill forceps [11-13], the use of the Foley probe [14, 15],flexible [16] or rigid esophagoscopy [17]. A review article discussed the management of coin ingestion (published by Waltzman) [2] based on a retrospective study and a prospective randomized trial. With the use of rigid esophagoscopy in symptomatic patients, On the other hand, children with localized EC of the lower third can be monitored for 12 to 24 hours in the absence of functional signs, in the hope of expulsion which may prevent the need for general anesthesia.

In our current practice, digestive endoscopy was performed in 100% of the cases. It is a digestive endoscopy with a rigid tube due to the lack of availability of the flexible pediatric endoscope. And no complications secondary to the endoscopic procedure were noted. Same technical procedure used by J.R. Benito Navarro et al. [19]. However, it is important to remember that esophagoscopy, whether flexible or rigid, is associated with a risk of esophageal perforation during the procedure evaluated between 5 and 10%.

As for the anesthetic protocol our attitude depends on the experienced operator or little, so the extraction procedure was performed without intubation, under anesthesia sevoflurane, and in 20% of cases associated with the injection of propofol spontaneous ventilation. This extraction was 100% successful. In the Cetinkursun et al [12] series, the extraction was performed without intubation under sedation inhaled with sevoflurane. Similarly in the series of Baralcoll [18], extraction was done in 21 children sedated by propofol in spontaneous ventilation and without tracheal intubation. Janik E et al [13] mentioned the risk of respiratory complications in the absence of tracheal intubation. Nevertheless, in our series, strictly respecting the rules of preoperative fasting, and as elsewhere, laryngospasm or desaturation have not been recorded as in the literature Cetinkursun S, et al [12].

The post-exploration suites were favorable, the children are monitored for 2 hours post-exploration, then handed over to the parents.

V. Conclusion

The ingestion of coins is a frequent accident in children and the diagnosis is most often evident by a cervical x-ray. Endoscopic exploration is easy with halogenated anesthesia and propofol sedation, after respecting the preoperative youngster. But like any accidental situation, prevention requires good education for parents and young children.

Conflict of interest

The authors declare that they have no conflict of interest.

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