

ETIOLOGICAL FEATURES OF VOMITING IN INFANTS

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ABSTRACT

Introduction: Vomiting is one of the most common symptoms in children and a common reason for seeing a doctor. The causes are very numerous and unusually diverse, but in most cases, vomiting is of organic origin.

Objective: This paper is a retrospective case study - control, performed in the Pediatric Clinic of Spitalul Clinic Județean Constanța, which aims to evaluate the clinical and etiological aspects of vomiting in infants.

Material and method: The statistical study was performed over a period of 6 months (January 1st, 2019 - June 30th, 2019), on a group of 1091 infants selected from a total number of 3943 children hospitalized during this period in the Pediatric Clinic. The patients in the study group ranged in age from 0 to 12 months. The data were extracted from the patient observation sheets in the archives of the Pediatrics Department.

Results and discussions: The retrospective study carried out resulted in the following important aspects related to the etiological particularities of vomiting. Of the total number of infants admitted during the study period, vomiting was a symptom in 29.60% of cases. The analysis of the study revealed the predominance of organic etiology (79.57%), with clear predominance in newborns and infants of cases of vomiting with organic etiology (79.56%). Cases of vomiting with functional etiology occurred in the newborn and infant are represented by eating errors. Within the organic etiology, the digestive pathology predominates, accumulating a percentage of 53.86% of the total cases of vomiting occurred at this age. Of the diseases with extradigestive organic etiology, most were represented by respiratory diseases and ORL. The functional etiology registered a percentage of 20.43%, this predominating in infants, age group 7 - 11 months.

Conclusions: The idea that emerges from the study is that infants with vomiting are in large numbers and have a very varied etiology, so is necessary to apply a clear investigation algorithm, with the correct establishment of the diagnosis in each case, which leads to the best therapeutic conduct.

Keywords: vomiting, etiology, infant

Introduction

Vomiting is one of the most common symptoms in children and a common reason for seeing a doctor (1).

There is the notion of vomiting-symptom and the notion of vomiting-syndrome. As a symptom, vomiting is present in many diseases or disorders of the digestive tract (functional or organic) (2-4). As a syndrome, vomiting is the main or only manifestation, dominating both the

clinical appearance, the therapeutic conduct, and the prognosis.

Vomiting is the forced expulsion of gastric and / or intestinal contents, voluntary or not, which is accompanied by abdominal muscle contractions. It is important for the clinician to determine whether vomiting occurs as part of a self-limiting, benign process, or is a symptom of a major illness (3). Vomiting is a highly-integrated event, mainly somatic-motor, often preceded by nausea, increased salivation, gasping.

The causes are very numerous and unusually diverse, but in most cases, vomiting is of organic origin (5,6). The evaluation of the etiology will take into account: anamnesis, objective examination, laboratory tests, imaging examination results and response to empirical treatment.

Clinical importance of vomiting:

1. Vomiting can be seen as one of the body's defense systems, which serves to:

- removal of toxins /accidentally ingested toxins ;
- prevention of the absorption of potentially toxic agents;
- protection of the gastroduodenal mucosa in patients with peptic disease, the vomiting may decrease the amount of acid that comes in contact with the ulcerated mucosa. There are important individual variations in the emesis provocation: some individuals react at the slightest stimulation, others only after a very strong stimulation (7).

Vomiting is an important sign of many diseases of the infant and child; it can be part of a complex of symptoms: sepsis, meningitis, infectious enteritis (8-10).

The age of the patient at the moment of presentation to the doctor suggests the differential diagnosis, guides the clinician in planning an appropriate diagnostic evaluation (11).

Very often, vomiting is NOT commonplace:

- a. by their repetition and abundance they can lead to dehydration and malnutrition.
- b. by inhalation, serious respiratory accidents occur, leading even to sudden death.
- c. it may indicate a severe condition.

The very varied characteristics and etiology require careful investigations to establish the diagnosis (12).

The differential diagnosis of vomiting in infants varies depending on age, genetic predisposition, diet and many other psychosocial factors. The coexistence of organic vomiting with those of functional cause has been observed quite frequently. It is generally easy to recognize the existence of vomiting by interrogation (anamnesis), which are often the reason for the consultation.

From the beginning there are 2 items

(aspects) that must be removed:

regurgitation which represents the oral removal of small amounts of milk or gastric fluid, which sometimes accompanies physiological belching in infants, the milk not being yet coagulated. Attention, however, their repetition throughout the day - especially when changing body position - usually reflects the existence of a gastroesophageal reflux (5,6).

mercyism: equivalent to rumination, is part of an array of severe behavior disorders: the child „brings back” (voluntarily) in the oral cavity small amounts of gastric contents, which he chews, then swallows. It is - in this case - absolutely necessary to consult a psychiatrist (3,13).

The etiological diagnosis of vomiting is based on a rigorous reasoning, which includes the anamnesis and the physical examination. This reasoning, in order to be successful, must be integrated into the specific age frame.

Objective

This paper is a retrospective case study - control, performed in the Pediatric Clinic of Spitalul Clinic Județean Constanța, which aims to evaluate the clinical and etiological aspects of vomiting in infants.

Vomiting is one of the most common symptoms in infants.

The controversial aspect regarding the etiology, the therapeutic attitude, underlines the importance but also the difficulty of approaching such a delicate and common problem in the current pediatric activity.

The present study aims to emphasize the importance of this issue in pediatric pathology, focusing mainly on the etiological and clinical aspects and on the role of paraclinical investigations in discovering the etiology and establishing the diagnosis.

Material and method

The statistical study was performed over a period of 6 months (January 1st, 2019 - June 30th, 2019), on a group of 1091 infants selected from a total number of 3943 children hospitalized during this period in the Pediatric Clinic. The

patients in the study group ranged in age from 0 to 12 months. The data were extracted from the patient observation sheets in the archives of the Pediatrics Department.

For the study, the following data were collected and processed:

- patients age;
- patients sex;
- environment of origin (urban or rural);
- reasons for hospitalization;
- the physiological personal antecedents of the patients;
- the pathological personal antecedents of the patients;
- the heredo-collateral antecedents of the patients;
- living conditions;
- general condition at admission;
- general physical examination at admission;
- the characteristics of vomiting;
- paraclinical investigations performed:
- usual investigations performed in all hospitalized patients (complete hemogram, thoraco-pulmonary radiography, PPD test, ENT examination, pharyngeal exudate, urine summary examination, coproparasitological examination);
- other laboratory investigations (electrolyte determinations, ESR, Fb, AST / ALT, blood glucose, calcium, urea, creatinine, ASLO, urine cultures, etc.);
- imaging investigations (abdominal ultrasound, barium transit, CT scan, urography, irigography, cranial radiography).

Results and discussions

Distribution of vomiting cases

Between January 1st, 2019 and June 30th, 2019, out of a total of 1,091 infants hospitalized in the Pediatric Clinic of Spitalul Clinic Județean Constanța, a number of 323 infants were registered who showed vomiting as a reason for hospitalization, isolated or associated with other symptoms, representing approximately 29.60% of the total.

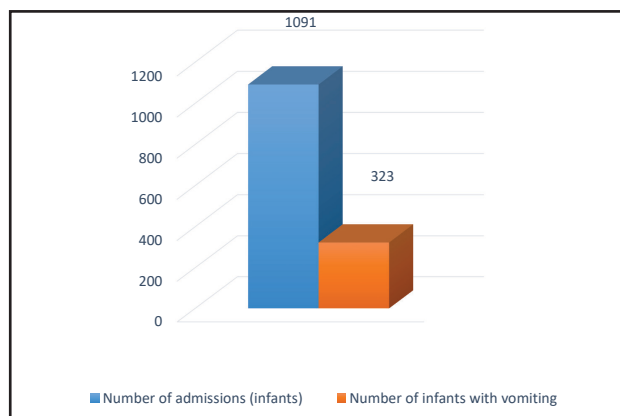


Figure 1. Distribution of hospitalized vomiting cases

Distribution of cases by sex. The analysis of the study shows that vomiting syndrome occurs with a slightly higher frequency in male patients (55.11%) than in female patients (44.89%).

Possible explanations would be:

- some conditions manifested by vomiting are more common in boys (eg. hypertrophic pyloric stenosis).
- vomiting being a symptom of many diseases that occur in almost the same proportion in both sexes results in a homogenization of the cases studied.

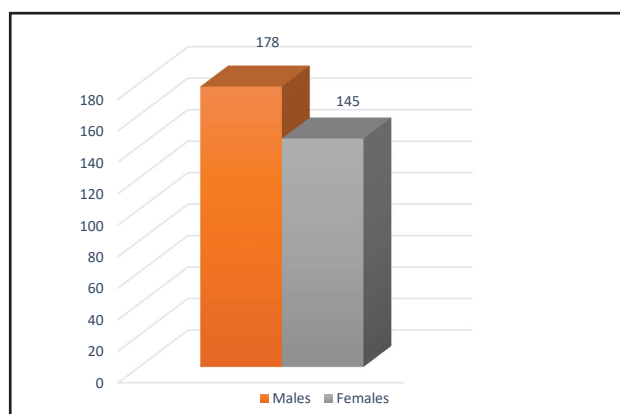


Figure 2. Distribution of cases by sex

Distribution of cases of vomiting in the newborn and infant. The study reveals a relatively homogeneous distribution by age groups of cases with vomiting in the patients studied.

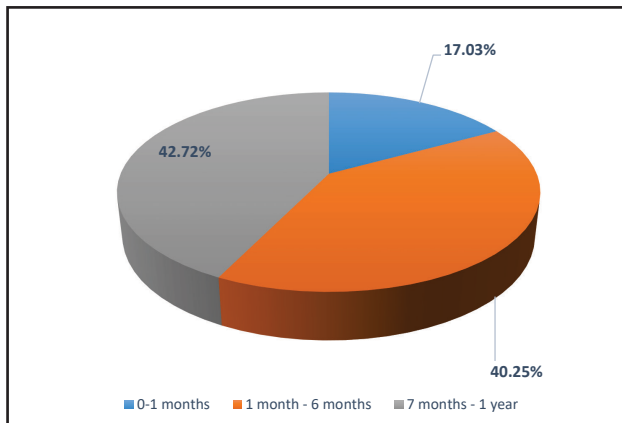


Figure 3. Distribution of cases of vomiting in the newborn and infant

Distribution of vomiting infants according to etiology (organic or functional). Vomiting of functional etiology were considered, the cases in which an organic cause was excluded and in which a series of nutritional errors were highlighted, either qualitative or quantitative.

These were found in 66 infants, representing 20.43% of the cases studied.

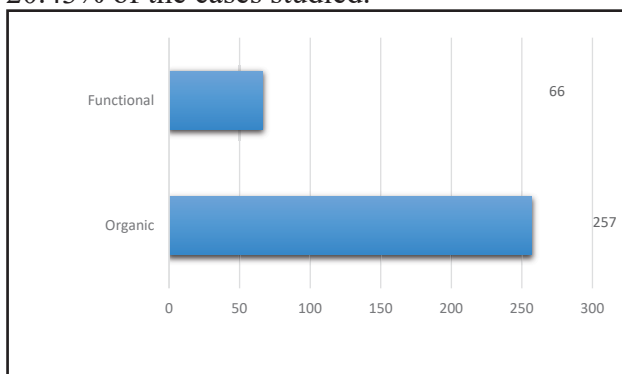


Figure 4. Distribution of vomiting infants according to etiology (organic or functional)

Distribution of cases of vomiting in the newborn and infant according to etiology. The analysis of the study shows the following aspects regarding the etiology of vomiting:

- clear predominance in newborns and infants of cases of vomiting with organic etiology (79.56%)
- cases of vomiting with functional etiology occurred in the newborn and infant are represented by eating errors.
- within the organic etiology, the digestive pathology predominates, accumulating a

percentage of 53.86% of the total cases of vomiting occurred at this age.

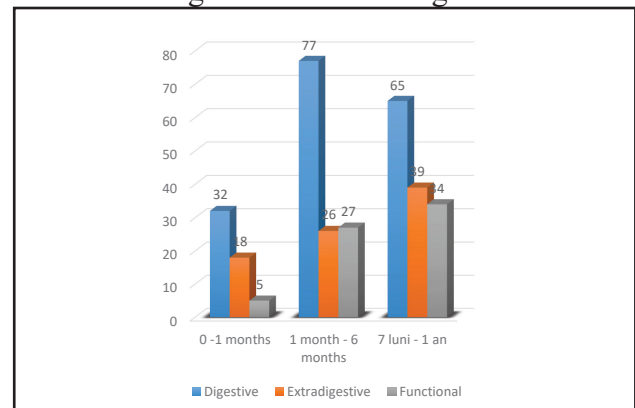


Figure 5. Distribution of cases of vomiting in the newborn and infant according to etiology

Distribution of cases with digestive organic etiology. The study highlights:

- predominance of cases with vomiting of gastrointestinal etiology (94.25%);
- predominance of cases with vomiting due to gastrointestinal infections / inflammations (80.45% of the total cases with gastrointestinal etiology);
- hepato-biliary, pancreatic causes registered a frequency of 5.74% of the total cases with vomiting of digestive organic etiology.

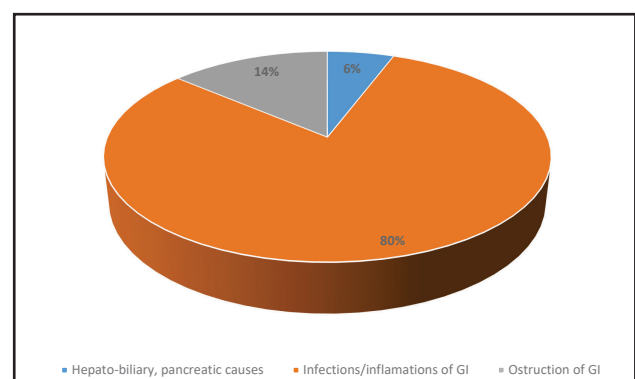


Figure 6. Distribution of cases with digestive organic etiology

Distribution of vomiting cases with extradigestive organic etiology

The analysis of the study notes in the extradigestive etiology the preponderance of respiratory and O.R.L. diseases, followed by

renal causes.

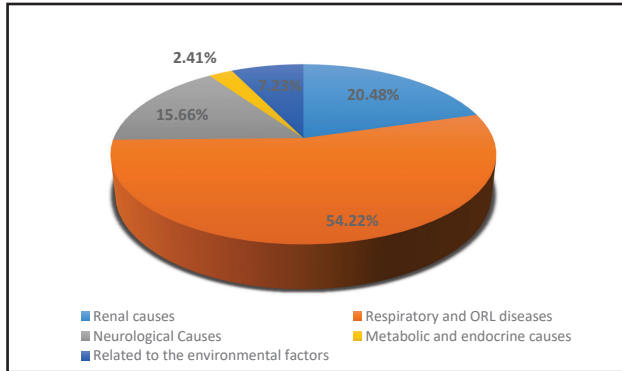


Figure 7. Distribution of cases with extradigestive organic etiology

Distribution of cases according to the appearance of vomiting.

- the predominance of cases with food vomiting was found
- the non-bilious vomiting denotes a causal prepyloric localization;
- biliary vomiting occurs in intestinal occlusion, dynamic paralytic ileus from sepsis or other serious infections (peritonitis, celiac syndrome); it was highlighted that the bile turns green in the presence of air;
- hemorrhagic vomiting is registered in cases of ulcer-hemorrhagic esophagitis, gastritis, peptic reflux esophagitis;
- fecal, fetid vomiting indicates peritonitis or lower digestive obstruction;
- it should be noted that some patients had food vomiting initially, then bilious.

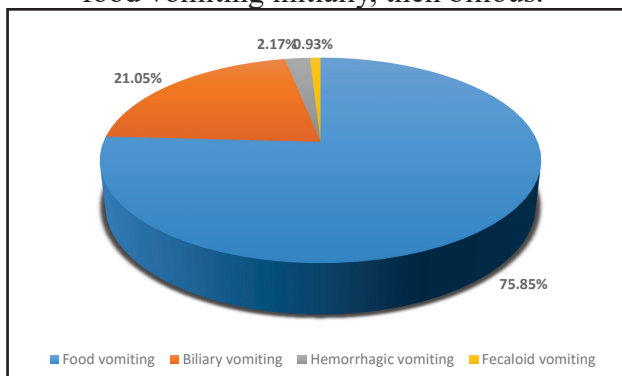


Figure 9. Distribution of cases according to the appearance of vomiting

Conclusions

Vomiting is one of the most common symptoms encountered in pediatric pathology, a symptom that occurs in a wide variety of etiological entities, some of them with a very high degree of severity: surgical and medical emergencies.

The retrospective study carried out resulted in the following important aspects related to the etiological particularities of vomiting:

Vomiting is a symptom encountered in all pediatric pathology, respectively 0 -16 years, with maximum frequency at infant age. Of the total number of infants admitted during the study period, vomiting was a symptom in 29.60% of cases.

The analysis of the study revealed the predominance of organic etiology (79.57%), with the following particularities:

- clear predominance in newborns and infants of cases of vomiting with organic etiology (79.56%).
- cases of vomiting with functional etiology occurred in the newborn and infant are represented by eating errors.
- within the organic etiology, the digestive pathology predominates, accumulating a percentage of 53.86% of the total cases of vomiting occurred at this age.
- of the diseases with extradigestive organic etiology, most were represented by respiratory diseases and ORL.

The functional etiology registered a percentage of 20.43%, this predominating in infants, age group 7 - 11 months.

In terms of associated gastrointestinal manifestations, anorexia and diarrhea predominated for both organic and functional etiology.

The associated extradigestive manifestations were represented in most cases by general symptoms (fever, respiratory manifestations, physical asthenia).

Regarding the aspect of vomiting, the study revealed the predominance of food vomiting.

The idea that emerges from the study is that infants with vomiting are in large numbers

and have a very varied etiology: from simple medical conditions or accidents to major surgical and medical emergencies, they occur at all ages, and although they have a favorable evolution and a good prognosis, it is necessary to apply a clear investigation algorithm, with the correct establishment of the diagnosis in each case, which leads to the best therapeutic conduct, particular to each etiological entity.

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