ENDOSCOPY - A NON-INVASIVE METHOD IN PEDIATRIC DIAGNOSIS AND TREATMENT

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Some results in the paediatric interventional and therapeutical endoscopy obtained at the Clinical Emergency Hospital of Children “Sfânta Maria” from Iași in the period 2000-2005 are presented. This study aims at giving examples of special cases recorded at “Sfânta Maria” Clinical Emergency Hospital of Children in period 2000-2005.

1. INTRODUCTION

Digestive endoscopy is an assembly of endoscopical technics that solve different aspects of the gastro-duodenal pathology. Assisted by computer, digestive endoscopy is an efficient and hipo-agressive method used both in diagnostics and in therapeutically purposes. Due to the pathological specific features, the area of endoscopic interventions in pediatry is more limited comparatively with interventional digestive endoscopy for men.

Therapeutical endoscopy was used relative more recently in paediatric practice, being favoured by special fibrescopes adaptable for children. There are 13 years of paediatric endoscopy and 12 years of digestive endoscopy applied in the Clinical Emergency Hospital “Sf. Maria” from Iași.

2. MATERIALS AND METHODS

The equipment used in endoscopical purposes consists from: video unit (Fig. 1a), endoscope (Fig.1b), canal lavaj/suction – gastropumping; instrumentalchannel; accessory instruments such as needle, clip, ansa, forceps, Savary-Gillard, sparking plug electrocauter (Fig. 1c).

The direct visualization of the internal organs and surfaces by endoscopy permits the diagnosis in esophagitis, ulcerous, morphological anomalies, and the establishment of the foreign bodies’ localization. Endoscopy permits biopsy accomplishment, lesion

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Supplementary, endoscopy permits the visualization of the coloured tissues that facilitates the diagnosis; it permits biopsy and diagnosis of the lesions without relief.

Fig. 1a

Fig. 1b

Fig. 1c

Fig. 1 Equipment used in endoscopic purposes
The main types of endoscopic manoeuvres applied for solving some aspects of the pathology of the digestive tube are: endoscopic polypectomy, the extraction of the foreign intra-oesophageal or intra-gastric bodies; endoscopic gastronomy; endoscopic sclerosis of oesophageal varicose veins; endoscopic homeostasis in violent oeso-gastro-duodenal non-varicose bleedings; endoscopic dilatations of oesophageal stenoses.

In Digestive Endoscopy Service of “Sfânta Maria” Clinical Emergency Hospital for Children from Iași all the mentioned above types of interventions are practiced. In this paper a few illustrative methods for therapeutical contribution are described.

The modern flexible endoscopes are used in paediatric therapy, for the foreign bodies or the tumours extraction.

3. RESULTS AND DISCUSSIONS

The results obtained in the paediatric interventional or therapeutical endoscopy at V Clinical Section of “Sfânta Maria” Clinical Emergency Hospital of Children, Iași, Romania, in period 2000-2005 are presented below. There are described the main results obtained in pathology of the digestive tube in the cases of children. The patients were controlled periodically and in a few cases, especially in the cases of violent oeso-gastro-duodenal non-varicose bleedings, the therapy has been repeated.

Endoscopic sclerosis of esophageal varicose veins

Endoscopic sclerosis of varicose veins (oesophageal, gastric or intestinal) is a devoted method having double aims: therapeutic and prophylactic, in order to prevent bleeding and to limit risks of bleeding by effraction of the varicose veins. Therapeutical interventional endoscopy is practiced in Surgery Block under general anaesthesia [1,2]. The sclerosant solutions used by us are: polydnoanol (aetoxisclerol) 0.5%, 3-5 syringes each of 0.5ml, applied intravariceal, peri variceal or snivelling, depending on the varicous cordon dimensions and absolute alcohol 0.1-0.2 ml in 3-5 doses. Usually, both types of injections are combitantly used.

In the V Paediatric Clinic 17 cases at which 2-5 practices were applied without complications. Some complications that could appear are: minor ulcerous, strictures, a minimization of the oesophageal motility, periesophagitis, mediastinitis and sepsis. The varicoses are injected circumpferentially by using a sclerosant needle (Fig.2), beginning with gastro oesophageal junction, under a distance of 5 cm over this. A quantity of 0.5-3ml of sclerosant agent is used for each varicose vein. The frequency of sclerotherapy treatments is after 7-14 days until the complete obliteration. Usually 3-6 sittings are necessary. After a month up to the last sitting, a control endoscopy is practiced followed by other after 6-8 months in the first two years.

24 endoscopic scleroses of II and III degrees were practiced at children of 2-12 years in 2000-2005 interval in Digestive Endoscopic Service of Sfanta Maria Clinical Emergency Hospital. Controlling endoscopy, practiced in 18 cases evidenced an amelioration of endoscopic aspect with varicous veins diminution. No septic, hemorrhagic complications or perforation were registered.
**Dilatation of the oesophageal stenoses**

It is a more frequent practice having indications in the following cases: esophagitis gr.IV (cicatricial stenosis); post caustically stenosis; Chemo-radiotherapy in malignites; post-surgery esophagitis; congenital esophagitis; Achalasia cardiae, metaplasia Barrett. The interventions are practiced under general anaesthesia.

In 2000-2005 interval in Digestive Endoscopic Service of Sfanta Maria Clinical Emergency Hospital 59 oesophageal stenosis were treated. 48 between them were realised with Savary spark plugs (Fig.3).

**3. Endoscopic Polypectomy**

The most frequent in pediatry, the juvenile polyps without a malign potential are met. In the cases with frequent rectal bleeding amenia, endoscopic resection of the polyps is practiced in order to cancel the bleeding sources. The patient is prepared for endoscopic surgery by enema, to expel the colon content. Some bleeding and coagulation
tests are made before operation. Endoscopic intervention is made under total anaesthesia. The colonoscope is introduced up to polyp level; one visualizes the polyp and the instrument duct, pinching at the polyp basis, until the polyp becomes violet, and then introduces diathermal ansa. After axis is fixed, a high frequency current is applied at the exterior extremity of the ansa, after the ground clamp was fixed under the patient.

By electrocoagulation one resects the polyp, which will be extracted by using the clip for foreign bodies. In Fig. 4 the stages of an endoscopic polypectomy are illustrated.

For the polyps bigger than 1cm one makes resection in “slice” to eliminate the hemorrhagic risk. In the interval 1992-2004 in Digestive Endoscopic Service of “Sfânta Maria” Hospital were operated 30 children with unique polyp colorectal, placed between 8-45 cm from anus. Essential clinical signs were chronic bleeding and hypochromic anaemia in 23 cases. After endoscopic polypectomy, the evolution was very good permitting in 21 cases the living from the hospital in the same day or a day after the operation. In 4 cases non-significant bleeding were evidenced for 24-48 hours. Endoscopic control was made at 3-6 months in the first year. Only 3 cases with recidives were registered at 7, respective 12 months.
4. CONCLUSIONS

Therapeutical endoscopy constitutes a non-aggressive modality for solving the paediatric emergencies. Therapeutical endoscopy asks an experienced team as well as refined and flexible endoscopes with different accessories. Therapeutical endoscopy permits a great accuracy diagnosis and offers possibilities for therapy. Their inconvenient are: the insufficient literature, the demand for pre-medication, and the possibility of aggravation of the pre-existent hypoxia.

REFERENCES