Case Report Duplication Of Gastrointestinal Tract

DR. YOSEPH TEWOLDE, MD, GENERAL SURGEON,
HALIBET HOSPITAL

Abstract

A 6 Months old male child presented to the Orotta Pediatrics Hospital with recurrent chest infections and respiratory distress since birth. He was treated accordingly at different admissions but with marginal improvement. Investigations revealed the presence of a cystic mass in the right posterior mediastinum. The mass was resected through a thoraco-abdominal approach. Histopathology revealed it to be enteric foregut duplication.

INTRODUCTION

Duplications of the alimentary tract are rare congenital malformations that may be found anywhere along the entire gastrointestinal tract. They may vary in presentation, size, location, and symptoms. They are spherical (75%), or tubular (25%) structures (1). Their importance lies in the fact that they readily mimic other surgical disease processes & may result in significant morbidity if left untreated.

75% of duplications are abdominal, 20% thoracic, & 5% combined. The commonest mode of presentation in thoracic/ thoraco-abdominal duplications is respiratory distress because of airway compression due to an enlarging mass (2). A correct preoperative diagnosis is seldom possible as symptoms are so varied and the entity rare. A high index of suspicion is required for diagnosis (3).

We report a case of intra-thoracic foregut duplication & discuss the problems encountered in its diagnosis and management.

CASE REPORT

A 6 months old male infant presented with recurrent chest infections for 3 months and had frequent admissions for treatment. With a presumptive diagnosis of bronchopneumonia, with respiratory distress and failure to thrive, different antibiotics have been used to treat his chest infections. On examinations was a sick looking infant in moderate respiratory distress, respiratory rate 60/m, apical heart rate 120/m, weight 5.4kg, oxygen saturation 84%, remarkable chest retractions, and decreased air entry on the right Chest. Hemoglobin was 10 gm%. Biochemical tests were within normal limits. Chest X-ray showed multiple cystic cavitary lesions on the right lower chest with left mediastinal shift. Barium meal revealed a defect on the right hemi-diaphragm with gastric herniation & lung compression (figure1).

A provisional diagnosis of right diaphragmatic hernia with lung hypoplasia was made and patient was subjected for laparatomy. Exploration disclosed an intact diaphragm, and normal anatomical location of the stomach and liver with signs of jejunal duplication. A right thoracotomy then revealed a large spherical mass in the right chest cavity with collapsed lung. There was relative fixity of the mass to the esophagus and posterior mediastinum. Careful mobilization showed a tubular hollow viscus with a proximal attachment to the esophagus and distal communication with the duodenum (Fig 2).

An intra-operative diagnosis of gastrointestinal duplication was entertained and complete resection of the duplicated segment was effected from the chest. Histopathology proved the diagnosis of enteric duplication (Fig 3).

A tragic event occurred intra-operatively when the child suffered cardiac arrest and was successfully reversed by cardiopulmonary resuscitation. He had an eventful postoperative course with hypoxia and seizure disorder despite stable hemodynamic state. Brain damage persisted and all modalities of treatment were terminated upon confirmation of brain death.

DISCUSSION

The incidence of GID is not precisely known: 1 in 4500 autopsies had duplications in one study (4). 80% present in the first 2 years of life. The commonest site is the ileum (50%), followed by esophagus (15%). Combined thoraco-abdominal occur in less than 2% of the cases. Heterotopic gastric mucosa exists in 30% of duplications resulting in bleeding, ulceration and perforations (5). The characteristic features described are attachment to the alimentary tract, well developed coat of smooth muscle, and inner mucosal lining. Several theories have been proposed for the development but the exact etiology has not yet been established. Among the theories proposed are the split notochord, embryonic diverticula, external compression, epithelial recanalization, and vascular accidents (6).

Many duplications are diagnosed incidentally, most patients present with a combination of pain and/or obstructive symptoms. Thoracic duplications present with respiratory distress which can be life-threatening. However in most cases definite diagnosis is not made before surgery (2).

Thoracic duplications are often apparent on routine chest radiographs. They have a characteristic enhancing ring that can be revealed by computerized tomography. Contrast studies are helpful in demonstrating mass effect and displacement of normal alignment. MRI and endoscopy can delineate precise localization and associated abnormalities (7).

In general, excision is the preferred treatment whenever possible, but segmental resection, mucosal...
stripping, marsupulisation, and varied drainage procedures are acceptable alternatives (1).

SUMMARY
This child presented initially with features of bronchopneumonia, and respiratory distress. Failure to respond to medical therapy prompted further considerations and the diagnosis of diaphragmatic hernia was suggested based on contrast studies. The intra-operative finding however was quiet astonishing.

This child presented initially with features of bronchopneumonia, and respiratory distress. Failure to respond to medical therapy prompted further considerations and the diagnosis of diaphragmatic hernia was suggested based on contrast studies. The intra-operative finding however was quiet astonishing.

This case highlights the mysterious presentation of gut duplication and the problems associated in diagnosis and management.

REFERENCES
3. Arbona JL; Fazz JGF, Mayoral J. Congenital Esophgeal cysts; Case report and review of literature, Am J Gastroenterol 1984; 79 : 177-182
Scope, Editorial Policy and Guidelines to Contributors

1. Content.
JEMA's mission is “to publish and disseminate scientifically rigorous health information of Eritrean and international significance that enables policymakers, researchers and practitioners to be more effective; it aims to improve health of Eritrean people”. JEMA welcomes unsolicited manuscripts, which are initially screened by the editorial board for originality, relevance to a national or an international health audience, and scientific rigour. Manuscripts passing the initial screening may be sent for peer review. After the reviews have been received, a decision on the manuscript's acceptability for publication in the Journal is made by the Editorial board. Accepted papers are subject to editorial revision, including shortening of the text and omission of tables and figures if appropriate. The word limits shown below do not include the abstract (where applicable), tables, figures, and references. The principal sections of the Journal are as follows.

1.1. Unsolicited manuscripts
Research, and Policy and Practice papers must be accompanied by two paragraphs indicating what they add to the literature:
Paragraph 1: a brief explanation of what was already known about the topic concerned.
Paragraph 2: a brief outline of what we know as a result of the study.
Research. Methodologically sound primary research of relevance to national or international public health. Formal scientific presentations of not more than 3000 words, with a structured abstract (see below, 2.8) and not more than 50 references; peer reviewed. Reports of randomized trials must conform to CONSORT guidelines (available from: URL: http://www.consort-statement.org/).
Policy and Practice. Reviews, debates, or hypothesis-generating articles; not more than 3000 words with a non-structured abstract (see below, 2.8) and not more than 50 references; peer reviewed.
Perspectives. Views, hypotheses, or discussions (with a clear message) of an issue of national public health interest; up to 1500 words, no references.
Letters. Useful contributions referring to something published recently in the Journal; 400-850 words, maximum 6 references. Letters are also edited and may be shortened.

1.2. Commissioned manuscripts
Editorials. Authoritative reviews, analyses, or views of an important topic, related to the year's theme or a topical subject; not more than 850 words, maximum 12 references.
Commentaries. Explanatory or critical analysis of an individual article; not more than 800 words, maximum 12 references.
Medical/Public Health Reviews. Evidence-based review articles that focus on an important aspect of a particular disease or public health policy. Not more than 3000 words with a non-structured abstract (see below, 2.8) and not more than 50 references; peer reviewed.

1.2 Ethical issues.
The Eritrean Medical Association publishes the results of research involving human subjects only if such research has been conducted in full accordance with ethical principles. Any manuscript describing the results of such research that is submitted for publication must contain a clear statement to this effect, specifying that the free and informed consent of the subjects or their legal guardians was obtained and that the relevant institutional or national ethical review board approved the investigation.

1.3 Conflicts of interest.
A conflict of interest arises when a professional judgment concerning a primary interest (such as a patient’s welfare or the validity of the research) tends to be unduly influenced by financial gain or other self-interested motive which may be at odds with professional obligations. Authors should disclose at the time of submission information on financial conflicts of interest that may influence the manuscript. They may also choose to declare other interests that could influence the results of the study or the conclusions of the manuscript (e.g. employment, family relationships, academic links, political or social interest group membership, deep personal conviction).

1.4 Funding.
Authors should declare sources of funding for the work undertaken.

1.5 Reprints.
Reprints of contributions are not produced; a print copy of the issue will be sent to the corresponding author of each contribution.

2. Preparation and submission of manuscripts

2.1 Correspondence.
Manuscripts should be submitted to the ERIMA office, attention to the chairperson of JEMA's editorial board.

2.2 Uniform requirements.
Papers should be prepared in accordance with the fifth edition of the Uniform Requirements for Manuscripts Submitted to Biomedical Journals established by the Vancouver Group (International Committee of Medical Journal Editors, ICMJE), originally published...
2.3 Languages.
Papers should be submitted in English. The Journal is published in English.

2.4 Authorship.
Authors should give their full names, the name and address of their institutions, and an exact description of their posts in accordance with “Uniform requirements” of the Vancouver Group (see above, 2.2), each author should have participated sufficiently in the work being reported to take public responsibility for the content; each author should provide a description of his or her contribution to the work being reported. The full postal and email address of the contacting author will be published unless otherwise requested.

2.5 Copyright.
Papers should be accompanied by a statement that they have not already been published and are not being considered for publication elsewhere and that, if accepted for publication in the JEMA, they will not be submitted for publication elsewhere with out the agreement of the Eritrean Medical Association. If a manuscript is accepted for publication, the author(s) will be asked to sign a statement granting exclusive license to the Eritrean Medical Association. Authors are responsible for obtaining permission to reproduce in their articles any material enjoying copyright protection. The letter granting such permission should be sent to the Editorial board.

2.6 Footnotes.
Use of footnotes in the text is not encouraged, but if they are used as links in the Journal by the automatic footnote facilities of word-processing software must be removed.

2.7 Tables and figures.
The tables and figures should be used only if they enhance understanding of the text.

Data should not be presented in both tables and graphs in the text; tables and figures should be referred to by number (e.g. Table 1, Fig. 3) and should be numbered consecutively and presented on separate pages with clear, concise titles. Abbreviations or acronyms should be avoided but if used must be explained.

2.8 Abstracts.
Abstracts, which should be clearly written and serve as an “appetizer”, should be provided for the following types of articles: Research, Policy and Practice and Public Health Reviews. The abstract, which should not exceed 250 words, is printed at beginning of the paper. For Research articles the abstract should be structured: Objective, Methods, Findings, Conclusion.

2.9 Keywords.
The abstract should be followed by a maximum of ten keywords or short phrases to assist indexers in cross-referencing the article. 2.10 Bibliographic references. Authors are responsible for the accuracy of all references. References should be numbered consecutively as they occur in the text.

2.10 Maps.
Use of maps should be avoided, but should their use be necessary authors are requested to use the relevant UN approved maps, which can be downloaded from: http://www.un.org/Depts/Carrographie/english/htmain.htm., or state that the map is not official map for international boundaries.