ECRONICON OPEN ACCESS

EC PAEDIATRICS
Research Article

Clinical-Surgical and Pathological Evolution of Patients with Mass Side of the Mesentery and Omente in the Manuel De Jesus Rivera Children's Hospital "La Mascota". January 2009 - December 2014

Luden Monge Vázquez*, Mariano Montealegre and Francisco Rodríguez Lara

Pediatric Surgeon, Universidad de Ciencias Médicas, Nicaragua

***Corresponding Author**: Luden Monge Vázquez, Pediatric Surgeon, Universidad de Ciencias Médicas, Nicaragua.

Received: May 16, 2018; **Published:** August 08, 2018

Abstract

The present study was carried out in the Manuel de Jesús Rivera Hospital of Managua, with the objective of knowing the surgical and pathological clinical evolution of patients with cystic mass of mesentery and omentum, January 2009 - December 2014.

The study is a series of cases. The sample consisted of 13 patients who were diagnosed with cystic mass mesentery and omentum.

The average age of the patients was 4.4 years, the female was the predominant, the majority of the patients were from Managua and most of them had an adequate weight for age.

The site of the most frequent cyst was the mesentery, the predominant symptom was abdominal pain and the most frequent clinical sign was abdominal distention.

The diagnostic means that predominated was abdominal ultrasound. The type of surgical approach was mostly conventional and elective. The most frequently performed surgery was exeresis of the cyst. The content of mesenteric cysts was mostly hematic. The hospital stay averaged 12.6 days. The most common medical complication was anemia, in the majority of patients there were no postoperative complications. The condition of discharge in all patients was discharge.

The incidence rate was 1.57 cases per 10,000 admissions.

The histopathological diagnosis was lymphangioma and the most frequent presurgical diagnosis was appendicitis and mesentery cyst.

Tutor's Opinion: The cystic masses of the mesentery and omentum is a rare entity in pediatrics, there are few and brief reviews of the subject in the literature, however it is a challenge for pediatricians and pediatric surgeons to make an accurate diagnosis to perform a good management given the complications These patients can suffer and their early detection and adequate surgical behavior gives us very favorable results with low recurrence rate.

I believe that this study presented by Dr. Luden Monge gives us information about the behavior of this pathology in our hospital and at the national level given that no study of this pathology has been conducted at a national level like this.

Keywords: *Cyst; Mesentery; Omentum*

Introduction

The cyst of mesentery and omentum is a rare entity and the medical publications refer to the presentation of few cases attended in a hospital unit and in a certain period of time, with brief reviews of the subject. Reference is made to 1994 of just over 800 cases published in the literatura [1].

A series of modern studies shows that about one third of mesenteric cysts occur in children under the age of 15 and that a quarter of these patients are under 10 years old. These cysts are reported more commonly in girls than in boys and white people [2].

The most frequent cases are benign lymphangiomas produced by the proliferation of ectopic lymphatic tissue. They usually present in the mesentery of the small intestine or in the omentum and from there they spread diffusely to the retroperitoneal space. The cysts represent a localized form of intra-abdominal lymphangiomas, similar to the cystic hygromas in the neck, where they can reach enormous dimensions [3].

Among the complications that the patient may suffer we have peritonitis secondary to perforation of the cyst, intestinal occlusion, scrotal herniation, volvulation and even malignancy, but its early detection and surgical behavior offers very favorable results with low rate of recurrence [4,5].

Research Problem

What is the clinical-surgical and pathological evolution of patients with cystic mass of mesentery and omentum at the Manuel de Jesús Rivera Children's Hospital "La Macota" during the period of January 2009- December 2014?

Background

A study of 8 cases operated with a diagnosis of omentum or mesenteric cysts in the period from January 1982 to December 2001, at the Centro Habana University Pediatric Hospital by Dr. Vivian Vialat Soto., *et al.* In all cases, total exeresis of the benign tumor lesion was performed; 3 cases were cysts of the small bowel mesentery and 5 cases cystic lymphangiomas of the greater omentum. In 2 patients it was necessary to perform intestinal resection for tumor excision. There were no complications in our cases. Of the total of 200,941 patients admitted, 8 patients presented this pathology, for an incidence of 0.3 x 10,000 [6].

Cruz Mauricio and collaborators in Mexico reviewed 16 consecutive patients who were diagnosed with mesenteric cysts in their workplace, from 1994 to 2007. The diagnosis was made with the use of 2 imaging modalities: ultrasound and computed tomography (CT). The medical records of these patients were reviewed retrospectively and the data collected was analyzed. The study group comprised seven men and nine women (average age: 38 years, range: 12 - 68 years). Some of the symptoms they presented included abdominal pain (62.5%), abdominal tumor (43.8%) and intestinal obstruction (6.3%). One patient was asymptomatic and the mesenteric cyst was incidentally diagnosed with an ultrasound during her pregnancy. The palpable abdominal mass was the sign most frequently evoked during the physical examination. The diagnosis was made by ultrasound in eight (50%) patients, with half of them undergoing an additional CT to complement the ultrasound. In the remaining eight patients (50%), CT was the only modality used. Laparoscopic surgical resection of the cyst was performed in 18.8% of the patients, laparotomy in 75% and one patient refused surgery. In two of the laparoscopic cases, the cysts were aspirated before performing a successful resection due to their considerable size (20 and 21 cm, respectively). The third case had a block resection without eventualities of the mesenteric cyst and without the need for aspiration. The size of the resected cysts was from 4 to 29 cm. The most common sites of mesenteric cysts included the retroperitoneum (31.3%), sigmoid mesocolon (25%) and small bowel mesentery (25%). All parts were sent for histological examination after surgery. Twelve cyst were benign, with diagnoses of benign cyst, dermoid cyst and gastrointestinal stromal tumor. There was evidence of malignancy in the cysts of three patients. Histological diagnoses included mucinous cystadenoma and leiomyosarcoma. Inadvertent spillage of cyst content occurred in one patient and the other 2 patients had questionable resection margins. All three received postoperative chemotherapy. Two of the patients had only en bloc resection of the cyst, while the other patient required an associated right hemicolectomy, due to the proximity of the tumor to the ileocolic pedicle, requiring its resection. These patients underwent postoperative gastroscopy and colonoscopy, as part of the study to exclude any intrinsic lesion. None of the patients developed a relapse. The average duration of follow-up was 9 months (range, 2 months to 4 years) [8].

A retrospective review of the cases of mesentery cyst diagnosed from 1993 to 2008 in a hospital in Villahermosa, Mexico; by Rubén Álvarez and collaborators. Analyzing sociodemographic variables, clinical picture, physical examination, diagnostic aids, findings and surgical procedures, as well as histopathological diagnosis. There were 21 cases in 15 years, 19 patients with mesentery cyst and 2 with omentum cyst. Eleven (52%) of the male sex, the predominant symptom was abdominal pain in 14 patients, 5 were asymptomatic. On examination, abdominal distention and palpable mass were found in 10 patients (47%), acute abdomen with positive rebound in 8 (38%), intestinal occlusion data in 5 (24%). The abdomen radiography showed hydro-aerial levels in 14, absence of air in the pelvic cavity in 3 and in 2 an opacity that could correspond to the cyst. Ultrasound was performed in 19 and computed tomography of the abdomen in 14 demonstrating an opacity in the abdomen with liquid density in its interior. The preoperative diagnosis was successful in 14, not successful in 7, with preoperative diagnosis of appendicitis, intestinal occlusion and with ovarian tumor. The most affected site was the ileum in 15 cases, colon 3, jejunum 1 and omentum 2. The size varied from 5 to 30 cm in diameter. All patients underwent exploratory laparotomy

and resection of the cyst; cysts were found very attached to the mesenteric vessels; in no case there was complication. Two cases of abscessed cysts were found, but the germ could not be obtained by culture. In all cases, their pathological origin was reported as lymphatic and in no case of mesothelial origin or malignant characteristics [7].

A case was reported in 2013 of a child with mesenteric cystic lymphangioma in the Cesar Amador Molina de Matagalpa Hospital, originally from San Pedro del Norte, Nicaragua; the patient was 4 years old who presented abdominal pain of two months of evolution and abdominal mass treated with antiparasitic drugs without improvement, for which abdominal ultrasound was indicated in a private consultation and later abdominal CT that report a complex cystic image, with multiple septa. An exploratory laparotomy was performed, finding a mesenteric cyst of 21 x 18 x 12 cm, of liquid citrine content, it was completely removed and a sample was sent to the pathology, there were no complications and after 48 hours the patient was discharged and followed up by external consultation. Histopathological result was cyst of mesentery of lymphatic origin [10].

Justification

The unpredictability of the mesenteric cyst has posed significant challenges to pediatricians and pediatric surgeons alike, given that the symptoms and signs are nonspecific in this disease and may even be asymptomatic, which is why it is a diagnostic problem.

It is very important to make an early diagnosis to avoid complications that these patients with mesentery and omentum cyst could present, for this it is essential to incorporate in the doctor's mind the possibility of diagnosis through a detailed clinical history and a complete physical examination, which it allows us to obtain information, being able to find symptoms and signs, although non-specific, but when they arise they must force us to investigate and make differential diagnoses of the different abdominal masses. Given the suspicion of this we can make use of the various modalities by images to achieve an accurate diagnosis and later plan the surgical resolution with the aim of completely resecting the tumor, facing post-surgical complications that these patients could present.

Therefore, the following study is carried out in order to summarize the experience in our hospital, identifying the most characteristic symptoms and signs that open guidelines for diagnosis, describing the sociodemographic findings, highlighting the different diagnostic means, complications and knowledge the management of mesenteric cysts to be prepared to assist a patient with this disease.

General Purpose

To know the surgical and pathological clinical evolution of patients with cystic mass of mesentery and omentum at the Manuel de Jesús Rivera Children's Hospital. January 2009 - December 2014.

Specific Objectives

1. Describe sociodemographic characteristics of the patients under study.
2. Mention the clinical characteristics and type of surgical medical approach, Complications and condition of discharge
3. To report the incidence of cystic mass cases of mesentery and omentum in our hospital during the study period.
4. Relate presurgical diagnosis and histopathological diagnosis.

Theoretical Framework

The mesentery consists of two peritoneal leaves that attach the bowel loops to the posterior wall of the abdomen, between said leaves there is connective tissue, adipose tissue, blood and lymphatic vessels, smooth muscle fibers, nerves, as well as embryonic remnants, the cyst of mesentery and omentum is any tumor of liquid content of any pathogenic origin, which is located between the two leaves of the mesentery or in the epiplon [1].

Embryology

Several mechanisms have been suggested to account for the development of mesentery cyst and omentum, including failure in embryonic lymphatic spaces with venous system attachment, deficiency of the normal lymphaticovenous short circuit in the perinodal tissue, failure in the fusion of the leaves of the mesentery, occult trauma, neoplasia, and degeneration of lymph nodes, among others [2].

The most commonly accepted theory is that proposed by Gross, the benign proliferation of ectopic lymphatic tissue in the mesentery and the lack of communication with the lymphatic system [2].

The roll of the lymphatic obstruction is questionable, because the experimental occlusion of the mesenteric lymphatic channels in animals does not produce the formation of cysts due to the large collateral circulation rich in lymphatic vessels that it presents. In addition, lymphatic obstruction has not been demonstrated with lymphagography [2].

There are some hypotheses regarding the origin of mesenteric cysts [8]:

1. Rupture of lymphatic vessels, extravasation of lymph and formation of tissue and granulation.
2. Abnormal localization of the lymphatic tissue and lack of drainage path.
3. Failure in the fusion of mesenteric leaves during embryological development.
4. Abdominal injuries.
5. Lymphatic degeneration [8].

As can be seen, and due to the histopathological findings and their content, the formation of mesenteric cysts is mainly due to alterations in the formation or development of lymphatic tissue mainly and these are the cases of lymphangiomas, the lesion most frequently found in cysts. of mesentery [8].

Epidemiology

The incidence reported in the literature is 1 in 20,000 hospital admissions in the pediatric group, with respect to the age of presentation, mesenteric cysts have been reported in the neonatal period even in patients of 85 years [1].

It is mentioned that there is no difference in the presentation of mesenteric cysts in relation to race, although other reports indicate a low incidence in the black race. There is also a discrepancy in the distribution by sex, however, most publications conclude a ratio of 2: 1 in favor of the female gender [4].

Spectrum of the disease and differential diagnosis

Mesenteric cysts can occur anywhere in the gastrointestinal tract from the duodenum to the rectum, they can extend from the base of the mesentery to the retroperitoneum. The omentum cysts are located in the lesser omentum or in the greater 2, but a greater omentum 1 dependence is observed. The mesentery cyst is 4.5 times more common than the omentum cysts.2 60% of the cysts are located in the mesentery of the small intestine, 24% in the mesentery of the large intestine, and 14.5% in the retroperitoneum. The most common location is in the ileal mesentery. In the colon mesentery the cyst occurs most commonly in the sigmoid mesocolon [2].

Differential diagnosis of mesentery and omento cysts [2]:

1. Intestinal duplication cyst
2. Ovarian cyst
3. Choledochal cyst
4. Pancreatic, splenic or renal cyst
5. Hydronephrosis
6. Cystic teratoma
7. Ascitis
8. Appendiceal abscess [8].

The differentiation between intestinal duplication cyst and mesenteric cyst can be problematic, because both are often intimately associated with the intestinal wall, have a common blood supply, and a muscular wall adjacent to the intestine but the mesentery cyst does not have a well-defined wall mucous as the cyst of intestinal duplication [2].

Cysts can be single or multiple and multiloculated or uniloculated; being the most frequent unique and uniloculados. The content of the cyst is related to the location of the cyst, observing serous fluid, fibrinous, chylous or haematic. The cysts studied in the proximal mesentery region generally contain chyle, given the degree of absorption at that level [1]. The fluid is usually serous when the cyst is in the distal part of the small intestine or colonic and chylous mesentery when located in the mesentery of the proximal small bowel. The omentum cyst almost always contains serous fluid [2].

It has been pointed out that mesenteric cysts lack characteristic clinical manifestations and depend mainly on the location and size of the tumor, as well as the relationship they have with neighboring organs [1].

The clinical presentation of mesentery cyst and omentum can vary from an incidental finding during a laparotomy for any reason from an acute abdomen to an intraabdominal catastrophe that threatens life [2].

Basically, three forms of clinical presentation have been established [1]:

1. Incidental
2. Chronic picture
3. Acute abdomen syndrome [1].

The most common acute presentation in children is an intestinal obstruction with possible bowel volvulus and ischemia of the adjacent intestine [8].

Several complications have been associated with the mesentery and omentum cyst. These include intestinal obstruction (more common), volvulus, hemorrhage within the cyst, infection, rupture, cyst twisting, obstruction of the urinary or biliary tract and malignancy. The incidence of reporting malignancy (sarcoma, lymphangioendothelioma or more rare adenocarcinoma) is 3%, no malignancy has been reported in children [2].

Classification

Many classifications have been proposed, from the one made by Dowd in 1900 that divides them into simple and neoplasic; the classification of Finocheto that is based on the relation of the cyst with the intestine, mesenteric vessels and their extension; the classification of Ewing that groups them into tumors of embryogenic and pseudocyst origin [1].

Basically, three forms of clinical presentation have been established [1]:

1. Lymph-derived cysts
    a) Simple lymphatic cyst
    b) Lymphangioma
2. Cysts of mesothelial origin
    a) Simple mesothelial cyst
    b) Benign cystic mesothelioma
    c) Malignant cystic Mesothelioma
3. Enteric-Origin cyst
    a) Intestinal duplication cyst
    b) Enteric cyst
4. Urogenital cyst
5. Mature cystic Teratoma (dermoid cyst)
6. Non-pancreatic pseudocyst
    a) Of traumatic origin
    b) Of infectious origin

Perrots Classification for mesenteric cysts [8]:

1. Embryogenic and Development
    a. Enteric
    b. Urogenital
    c. Linfoide
    d. Dermoide

2. Traumatic or acquired cysts
    a) Caused by injuries
3. Neoplasicos cysts
    a. Benign (lymphatic hyperplasia)
    b. Malignant (Linfangioendotelioma)
4. Infectious and degenerative cysts
    a. Micoticos
    b. Parasitic
    c. tuberculous
    d. Degenerative
    e. Cystic ganglion degeneration

Diagnosis

Upon physical examination, most children with mesentery and omentum cyst have abdominal distention with or without a palpable mass. A defined mass can be difficult to feel because of its large size, smoothness and liquid consistency. The mass can be enormous, filling or embracing the abdominal cavity and simulating ascites. He is deaf to percussion [2].

The diagnosis of this pathology in children depends primarily on the physical examination and radiological examinations. Ultrasound is the exam of choice in pediatrics when in a patient with palpable abdominal mass and radiographs simple zone of soft tissue density is found, which rejects the intestinal loops this allows us to diagnose cystic lesions [1].

The diagnosis of Mesenteric Cysts is adequately established with ultrasound (USG) [8], but if it is documented with computed tomography (CAT) or even magnetic resonance imaging (MRI), it helps us to determine more precisely its origin and location [9], for the planning of surgical resolution with total or partial resection of the cyst with or without intestinal resection, since only aspiration and incomplete resection condemn recurrence. The mortality of the Mesenteric Cysts according to different authors does not exceed 20% [8].

Treatment

Upon physical examination, most children with mesentery and omentum cyst have abdominal distention with or without a palpable mass. A defined mass can be difficult to feel because of its large size, smoothness and liquid consistency. The mass can be enormous, filling or embracing the abdominal cavity and simulating ascites. He is deaf to percussion [2].

The preferred treatment of the mesentery cyst is enucleation. In adults, the cyst is often torn from the leaves of the mesentery; In children, however, intestinal resection is often required to remove the mass completely and ensure that the blood supply to the intestine is not compromised. Intestinal resection is necessary only in 33% of adults but 50% to 60% of children with mesentery cyst [2].

Recently laparoscopic surgery has become the management of choice in this group of patients when it comes to scheduled surgeries or emergency, this was first described by Dequanter in Belgium in 2002 in a case of acute abdomen, followed by Asola in Istanbul in 2003 with three cases, who reported a follow-up of 36 months without recurrence [8].

The mere aspiration of its content is condemned to recurrence, as well as partial resection. However, in cases where it is not possible to extirpation due to the possibility of injury of unresectable neighboring organs, marsupialization of the cyst has been suggested [1].

Mesenteric cysts, according to their morphology, are classified into: type 1: pedunculated (easily resectable); type 2: sessile, included between both leaves of the mesentery (requires resection of the affected loops and anastomosis, although there is some experience performing enucleation by separating the mesentery cyst from both leaves of the peritoneum); type 3: it extends in the retroperitoneum and usually can not be resected in its entirety, and type 4: multicentric, it will require several surgeries and/or sclerotherapy.

Forecast

The prognosis depends mainly on the patient's clinical conditions. Morbidity of 2% is mentioned in cases of enucleation and up to 25% in large resections. Mortality has been reported from 5 to 19% in cases that did not require resection and 10 to 20% in the group in which resection was performed.

Material and Method

Study Area: The study was conducted at the Children's Hospital of Nicaragua Manuel de Jesús Rivera.

Type of Study: A series of cases was carried out between January 2009 and December 2014.

Universe: all the patients admitted to the hospital during the study period were 82,366.

Sample: there were 13 patients who were diagnosed with cystic mass of mesentery and omentum during the study period. Sampling is for convenience, not probabilistic.

Inclusion criteria

The inclusion criteria of the children in the sample were the following:

1. Patients under 15 years of age with diagnosis of cystic mass of mesentery and omentum.

Exclusion criteria

1. Patients older than 15 years.
2. Patients diagnosed with a cystic mass of mesentery and omentum and in the transurgical findings there is an anatomic location different from these.

Variables

- **Dependent**
  - Cyst Site
- **Independent:**
  - **Objective No. 1:** Age, sex, origin, nutritional status.
  - **Objective No. 2:** Clinical picture, symptoms and signs present, means of diagnosis, type of surgical approach, indication of the procedure, surgery performed, cyst content, hospital stay, medical complications, recent medico-surgical complications, late mediate postsurgical complications, condition of exit.
  - **Objective No. 3:** Incidence of cystic mass of mesentery and omentum.
  - **Objective No. 4:** Pre-surgical diagnosis, histopathological diagnosis.

Operationalization of the variables

Variables	Concept	Indicator	Scale
Cyst Site	Anatomical place where the lesion is located	Clinical record	1. Mesentérico 2. Omental
Age	Time elapsed from birth to date of entry	Group Etaerio in years	1. Less than 1 2. 2- 5 3. 6- 10 4. 11-14
Sex	Physical and constitutive difference of man and woman	Son-in-law	1. Female 2. Men

Proceed Excellence	Place of origin of the patient	Department	1. Managua 2. Table 3. Chinandega 4. Lion 5. Matagalpa 6. Chinandega 7. Other
Nutritional status	Evaluation Nutritional status According to the Weight for Age according to Z-growth curves	Growth curve according to weight for age	1. High weight 2. Proper weight 3. Low weight alert 4. Low weight 5. Very low weight
Symptoms present	Discomfort referring to the patient at the time of admission	Clinical record	1. Abdominal pain 2. Vomiting 3. Anorexia 4. Constipation 5. None
Signs present	Anomaly discovered to the FÍSIC exam or the patient.	Clinical record	1. Distencion abdominal 2. Abdominal Mass 3. Fever 4. Anemia 5. Then Ascetic 6. Peritoneal irritation.
Diagnostic media	Procedures Auxiliary Imagological of those that are used in medicine for confirmation of a disease or disorder.		1. Abdominal ultrasound 2. Abdomen TAC 3. MRI 4. None
Type of surgical approach	It concerns surgical incision for the treatment of mesentery cyst used.	Type of Mode	1. Conventional abdominal 2. Video assisted.
Indication of the procedure	It is the situation in which Order The surgical procedure		1. Emergencia 2. Elective
Surgery performed	Any procedure Surgical and Technique used for the resolution of pathology.	Surgical technique	1. Excision of the cyst 2. Reseccion intestinal + anastomosis intestinal 3. Other
Mesentery cyst Content	Type of material within the cyst	Clinical record	1. Seroso 2. Quiloso 3. Blood 4. Fibrinous
Hospital stay	It is the time elapsed from the entrance to the discharge of the patient	Days	1. Minor 5 2. 6-10 3. 11-15 4. Greater than 16

Medic Complications As	It denotes a disease that overlaps another, or an episode, altering the symptoms and modifying its course to make it worse.		1. Pneumonia 2. Sepsis 3. Septic Shock 4. Respiratory failure 5. Hydroelectrolyte Alterations and acid Base 6. Other
Complications Postsurgical Mediate Recent	Any alteration with respect to the course envisaged in the local and systemic response of the surgical patient and that is presented from the exit of the room of recovery of the surgery until his hospital stay.		1. Surgical site Infection 2. Postoperative ileus 3. Atelectasia 4. Pneumonia 5. Other 6. No
Complications Postsurgical Mediate Late	Any alteration with respect to the course envisaged in the local and systemic response of the surgical patient and presented from hospital discharge to days, months and/or years after the procedure		1. Recurrence 2. Intestinal obstruction by flanges 3. Hernia postincisional 4. Other 5. No
Exit condition	Condition of exit of the patient of the unit of health.		1. High 2. Dead 3. Abandonment
Incidence	Proportion between Total of new patients with cystic mass From Mesentery and omentum and the total number of patients admitted in the study period At the Hospital Manuel de Jesús Rivera	Rate	Hospital
Diagnostic Histopathological Óstico	Is the result that reports Biopsy of the material sent to pathology.	Clinical record	1. Lymphangiomas 2. Mesothelial cyst 3. I do not know Performed Biopsy 4. Other
Diagnosis Presurgical	Presumptive pathology by which see takes patient to operating room	ExpeClinical Tooth	1. Appendicitis 2. Ovarian cyst 3. Mass Cystic Abdominal 4. Acute Abdomen 5. 0tros

Table

Information collection form

Instrument: A data collection form was made where the object-to-study variables were included.

Information sources.

The source of information: It is secondary, through the book of surgeries performed in the operating room and the clinical file. Once the basic information was obtained, the collection form was filled out.

Analysis of the information

The data was collected in the file, a data sheet was prepared in the epi-info program version 6.04 (MS-DOS), a database where the variables were processed and analyzed. The results are presented in simple frequency tables.

Operationalization of the variables

Analysis plan

Simple analysis

- Age
- Sex
- Origin
- Nutritional status
- Site of the cyst
- Present symptoms
- Present signs
- Diagnostic means
- Type of surgical approach
- Indication of the procedure
- Surgery performed
- Cyst content
- Hospital stay
- Medical complications
- Recent mediate postsurgical complications
- Late mediate postsurgical complications
- Exit condition
- Incidence
- Histopathological diagnosis
- Pre-surgical diagnosis

Results

The results of the clinical and surgical pathological evolution study of patients with cystic mass of mesentery and omentum at the Manuel de Jesús Rivera Children's Hospital "La Mascota". January 2009- December 2014, the following was found.

Of the sociodemographic characteristics of the patients under study, in relation to Age, it turned out that the most frequent group was that of 2 - 5 years with 53.8%, followed by 6 - 10 years with 30.8%, those under 1 year 15.4 %, and there were no patients in the age group of 11 - 14 years, Average age of 4.4 years, standard deviation of 2.9 years. In relation to the variable sex we found that the female was the most frequent with 69.2% and the male presented 30.8%. Regarding provenance, we found that 30.8% were from Managua, followed by 15.4% from León and the RAAS respectively, and 7.7% from Granada, Madriz, Matagalpa, Carazo and Boaco respectively. According to the nutritional status, 61.5% presented an adequate weight, 23.1% underweight, 7.7% very low weight and another 7.7% alert under weight, there were no patients with high weight.

With respect to the clinical characteristics and type of surgical approach of the patients with Diagnosis of cystic mass of mesentery and omentum; in relation to the cyst site, 69.2% were found in the mesentery and 30.8% in the omentum. According to the present symptoms, abdominal pain was the most frequent with 44.4%, followed by vomiting with 38.9%, then constipation with 11.1% and 5.6% without any symptoms. In relation to the present signs, abdominal distention showed 43.5%, followed by signs of peritoneal irritation 21.8%, abdominal mass and anemia 13% and fever 8.7%. In relation to the diagnostic means we found that in 44.4% abdominal ultrasound was performed, none in 27.8%, abdominal CT in 22.2% and magnetic resonance 5.6%.

Regarding the type of surgical approach, the conventional one presented 76.9%, followed by the assisted video with 23.1%. Regarding the indication of the surgical procedure, it was found that 61.5% were elective and 38.5% were emergency. With respect to the surgery performed, the excision of the cyst was the most frequent performed with 69.2% and intestinal resection + intestinal anastomosis with 30.8%.

In relation to the content of the cyst 46.2% was hematic, 38.5% serous and 7.7% chylous and fibrinous each one respectively. With regard to hospital stay, the most frequent is in the range of 6 - 10 days with 53.8%, followed by the range of less than 5 days with 15.4%, as well as the range of 11 - 15 days and greater than 16 days with 15.4% each respectively. An average of 12.6 days and a standard deviation of 18.5 days.

Regarding medical complications, none were found in 61.6%, severe anemia in 23%, pneumonia + sepsis in 7.7%, and hydroelectrolytic alterations with 7.7%. With respect to recent medial postsurgical complications in 92.3% there were no complications, in 7.3% recurrence and in 7.7% ilioposturgical. In relation to late mediate postsurgical complications in 84.7% there were no complications, in 15.3% there were recurrences of the cyst. With regard to the condition of discharge, it was found that 100% were discharged, there were no deaths or abandonment.

In relation to the incidence, we found 13 cases of cystic mass of mesentery and omentum for 82,366 hospital admissions during the 6 years of study from January 2009 to December 2014 at the Manuel de Jesús Rivera Hospital, resulting in 1.57 cases per 10,000 admissions.

In relation to the presurgical diagnosis and histopathological diagnosis, it was found that 36.36% of the patients with a histopathological diagnosis of lymphangioma had a pre-surgical diagnosis of appendicitis, another 36.36% of the mesentery cyst, 9.09% of the complex ovarian cyst, another 9.09% hemoperitoneum as well as intestinal obstruction. Of the patients who did not undergo a biopsy, 100% had a diagnosis of a mesentery cyst.

Variable	Category	Frequency	Percentage
Age	< 1 years	2	15.4
	2 - 5 years	7	53.8
	6 - 10 years	4	30.8
	11 - 14 years	0	0
	Total	13	100
	$\bar{x}$	4.4 Years	
	S	2.9 Years	
Sex	Female	9	69.2
	Male	4	30.8
	Total	13	100
Origin	Managua	4	30.8
	Lion	2	15.4
	RAAS	2	15.4
	Granada	1	7.7
	Madriz	1	7.7
	Matagalpa	1	7.7
	Carazo	1	7.7
	Boaco	1	7.7
	Total	13	100
Nutritional status	High weight	0	0
	Low weight alert	1	7.7
	Low weight	3	23.1
	Very low weight	1	7.7
	Proper weight	8	61.5
	Total	13	100

Table 1: *Distribution by frequency and percentage of the sociodemographic characteristics of patients diagnosed with cystic mass of mesentery and omentum in the Hospital Infantile Manuel of Jesús Rivera "the mascot". January 2009 - December 2014.*

Source: *Data collection card.*

Variable	Category	Frequency	Percentage
Mesentery cyst Site	Mesentérico	9	69.2
	Omental	4	30.8
	Total	13	100
Symptoms present	Constipation	2	11.1
	Abdominal pain	8	44.4
	Vomiting	7	38.9
	None	1	5.6
	Total	18	100
Signs present	Anemia	3	13
	Fever	2	8.7
	Abdominal distension	10	43.5
	Abdominal mass	3	13
	Signs of peritoneal irritation	5	21.8
	Total	23	100

Table 2: *Distribution by frequency and percentage of clinical characteristics and type of surgical approach of patients with cystic mass diagnosis of Mesentery and Omentum at the children's Hospital Manuel de Jesús Rivera "La Mascota". January 2009 - December 2014.*

Source: *Data collection card.*

Variable	Category	Frequency	Percentage
Diagnostic media	Abdominal Ultrasound	8	44.4
	TAC Abdominal	4	22.2
	MRI	1	5.6
	None	5	27.8
	Total	18	100
Type of surgical approach	Conventional	10	76.9
	Assisted Video	3	23.1
	Total	13	100
Indication of the surgical procedure	Elective	8	61.5
	Emergency	5	38.5
	Total	13	100
Surgery performed	Excision of the cyst	9	69.2%
	Resection intestinal + Anastomosis intestinal	4	30.8
	Total	13	100

Table 3: *Distribution by frequency and percentage of clinical characteristics and type of surgical approach of patients with mass diagnosis Cystic de Mesentery and Omentum at the children's Hospital Manuel de Jesús Rivera "La Mascota". January 2009 - December 2014.*

Source: *Tab Data collection.*

Variable	Category	Frequency	Percentage
Cyst Content	Blood	6	46.2
	Seroso	5	38.5
	Quiloso	1	7.7
	Fibrinous	1	7.7
	Total	13	100
Stay Hospital	< 5 days	2	15.4
	6 - 10 days	7	53.8
	11 - 15 Days	2	15.4
	> 16 days	2	15.4
	Total	13	100
	$\overline{x}$	12.6 Days	
	S	18.5 days	
Medical complications	Pneumonia + Sepsis	1	7.7
	Severe anemia	3	23
	Hydroelectrolyte Alterations	1	7.7
	No	8	61.6
	Total	13	100

Table 4: *Distribution by frequency and percentage of clinical characteristics and type of surgical approach of patients with cystic mass diagnosis of Mesentery and Omentum at the children's Hospital Manuel de Jesús Rivera "La Mascota". January 2009 - December 2014.*

Source: *Data collection Card.*

Variable	Category	Frequency	Percentage
Recent Mediate postsurgical complications	Postquirúrgico ileum	1	7.6
	None	12	92.3
	Total	13	100
Late mediate postsurgical complications	Recurrence	2	15.3
	No	11	84.7
	Total	13	100
Exit condition	High	13	100
	Deceased	0	0
	Escape	0	0
	Total	13	100

Table 5: *Distribution by frequency and percentage of clinical characteristics and type of surgical approach of patients with cystic mass diagnosis of Mesentery and Omentum at the children's Hospital of Manuel de Jesús Rivera "the mascot". January 2009 - December 2014.*

Source: *Data collection Card.*

Incidence	Formula	Operation	Result
	New cases of cystic mass of mesentery and omentum. Total admissions at the Hospital Manuel de Jesús Rivera since January 2009 to December 2014.	13 / 82,366 x 10,000	1.57 cases per 10.000 hospital admissions

Table 6: *Incidence of The Patients with cystic mass diagnosis of mesentery and omentum in the children's Hospital Manuel de Jesús Rivera "the mascot". January 2009 - December 2014.*

Source*: Statistics of the Hospital Manuel de Jesús Rivera.*

Diagnosis Presurgical	Histopathological diagnosis			
	Lymphangioma		I do not know Performed Biopsy	
	Fri	%	Fri	%
Appendicitis	4	36.36	0	0
Complex ovarian cyst	1	9.09	0	0
Mesentery cyst	4	36.36	2	100
Hemoperitonea	1	9.09	0	0
Intestinal obstruction	1	9.09	0	0
TOTAL	11	100	2	100

Table 7: *Diagnosis Presurgical and histopathological diagnosis of patients with mass Cystic mesentery and Omentum in the children's Hospital Manuel de Jesús Rivera "the mascot". January 2009 - December 2014.*

Source: *Data collection card.*

Discussion

From the results obtained in the study, Clinical and surgical pathological evolution of patients diagnosed with mesenteric cystic mass in the Manuel de Jesús Rivera Children's Hospital "La Mascota". January 2009- December 2014, it was observed that of the total number of patients studied, the age group most affected was that of 2 - 5 years, followed by the group of 6 - 10 years, this agrees with the literature consulted in which in the study of Alvarez Rubén reports that mesenteric and omentum cysts are intraabdominal cystic masses, predominantly during the first decade of life 7 and according to Guzmán Gilberto, he reports an average age of 4.35 years [1]. Regarding sex, it was found that the female sex predominated over the male sex and according to Rodríguez Álvarez there is a discrepancy in the distribution by sex, however, most publications conclude a 2: 1 relationship in favor of the female gender 4. In relation to the origin it was found that the highest percentage of patients are from Managua, this is clear because the Manuel de Jesús Rivera Children's Hospital is located in this department, however in this study it was also observed that there were many patients coming from the different departments of the country, This is explained because our children's hospital is a national reference

Regarding the nutritional status, it was found that most patients have an adequate weight, however we found children with very low weight, but in the international literature there is no section that refers to the nutritional status for which we can not do any comparison of this, but we give a valuable contribution for following studies. In addition, this depends on the time of evolution of the clinical manifestations, between later it is the diagnosis the deterioration in the nutritional state will be more evident.

Regarding the site of the mesentery cyst, it was found that mesentery was more common than omental, which is consistent with literature where mesentery is more frequent being 4.5 times more common than omento2 and according to the study by Álvarez Rubén of 21 cases of patients with a mesentery cyst in Mexico, 19 of mesentery and 2 of omentum [7].

The most frequent symptoms were abdominal pain and vomiting. The most frequent signs were abdominal distension, with nonspecific symptoms and signs, as reported in the literature consulted [2]. This coincides with the study by Álvarez Rubén in Mexico in which patients with abdominal distension and palpable mass were found in most cases [7].

The diagnostic means that was most frequently performed was abdominal ultrasound, abdominal CT scan and complementary magnetic resonance were required in a small percentage, this is complemented by the literature consulted, with ultrasound being the means of choice and CT of Abdomen and images of resonance for extension studies and that help us to plan surgical resolution [8]. In a high percentage of patients, no type of imaging study was carried out since the patients presented acute abdomen data, for which reason their surgery was performed urgently, but in spite of this, the number of patients was higher. I perform the surgery in an elective way. The type of approach that predominated was the conventional, however in a small percentage surgery was performed via assisted video, the type of surgery that was most frequent was the total exeresis of the cyst. This agrees with the literature in which only a small percentage require intestinal resection in children [2]. The objective of the surgery is complete resection of the mass [2]. The omental cyst is easier to remove and almost never requires intestinal resection. Opensum cysts can be excised using laparoscopic technique [2].

Regarding cyst content, the most frequent was blood cell and serous, this is related to the location of the cyst in the intestinal tract 1 and in our study it could not be established since the information in the operative notes is sometimes not mentioned. location of these tumors accurately.

In relation to the hospital stay, the most frequent range of days was 6 - 10 days with an average of 12.6 days, this shows that the stay is prolonged probably because extension studies were indicated as CT of the abdomen and in one case MRI. At that time there was no CT scanner in the hospital until 2013 and the medical staff managed it to perform it in another hospital. This is important given that the longer the hospital stay, the greater the risk of acquiring a nosocomial infection and of complications and the expenses that this generates.

The most frequent medical complications were anemia and pneumonia + sepsis and hydroelectrolytic alterations, which favored a longer in-hospital stay and delayed surgery scheduling. Post-surgical complications were mostly uncomplicated, which demonstrates the excellent evolution of these patients [1]. In a small percentage, recurrence occurred. The condition of discharge in its entirety was discharge, there were no deaths in our patients studied.

These intraabdominal tumors are rare in children; Vialat in Cuba reports an incidence of 0.3 in 10,000 admissions [6], others report 1 per 20,000 admissions in a pediatric hospital [2]. In this study, 13 cases were reported for 82,366 admissions during the six years of study, with an incidence of 1.57 cases per 10,000 admissions. to those reported in the literature, this could be due to the fact that a large percentage come from other departments of the country since our children's hospital is the national reference.

Regarding the histopathological diagnosis, the result is lymphangioma, which is consistent with the literature consulted in which this is the most frequent [3]. In a retrospective review of mesenteric cysts in Mexico, the lymphatic origin was reported by pathology in all cases. no case of mesothelial origin or malignant characteristics [7]. In the study conducted by Dr. Vivian Vialat in Cuba, it was reported that the majority of cases were cystic lymphangiomas of the greater omentum [6]. In Nicaragua in 2013, a case of mesenteric cyst was reported in a patient from Matagalpa whose histopathological result was mesenteric cystic lymphoma [7]. The preoperative diagnosis is very varied, which shows the wide range of diseases that this mass pathology Cystic mesentery and omentum can simulate since there are no characteristic clinical manifestations and depend mainly on the location and size of the tumor, as well as the relationship they keep with neighboring organs [11-17].

Conclusion

In this study Clinical and pathological evolution of patients with cystic mass of mesentery and omentum at the Manuel de Jesús Rivera Children's Hospital "La Mascota". January 2009- December 2014 we conclude the following:

1. The average age was 4.4 years, the female was the predominant, the majority of patients were from Managua and most of the patients had an adequate weight for age.
2. The site of the most frequent cyst was mesentery, the main symptom was abdominal pain, the most common clinical sign was abdominal distention. The diagnostic means that predominated was abdominal ultrasound, the most frequent type of surgical approach was the conventional one, and in an elective way. The surgery performed mostly was exeresis of the cyst. The most frequent cyst content was blood fluid, the hospital stay had an average of 12.6 days. The medical complication that predom inated was anemia and in the majority there were no postsurgical complications. The condition of discharge was the discharge in its entirety
3. The incidence rate was 1.57 cases per 10,000 admissions.
4. Of the total number of patients with histopathological diagnosis of lymphangioma, most had a pre-surgical diagnosis of appendicitis and mesenteric cyst.

Recommendations

1. Carry out continuing education programs for all medical and health personnel on this subject, cystic mass of mesentery and omentum, as well as the abdominal mass approach.
2. When dealing with a patient with a cystic mass of mesentery and omentum for management, a thorough history and a complete physical examination are mandatory, as well as being more detailed in the description and location of the cysts when describing the transoperative findings that allow us to perform a more detailed study.
3. Since there is always a risk of recurrence, I recommend following up on the longest patient with imaging studies that allow us to identify it.
4. I suggest the realization of a protocol on the approach and management of patients with cystic mass of mesentery and omentum.

Bibliography

1. Guzmán Gilberto. "Quiste de mesenterio". *Revisión Obtenido el 10 de marzo* (2015).
2. Ricketts Richard R. "Mesenteric and Omental Cysts". En O'Neill Rowe. Pediatric Surgery. St Luis. Edition Mosby 2 (1998): 1269-1275.
3. Calvillo Martin. "Quiste gigante de mesenterio en un recién nacido: Reporte de un caso". *Revista Perinatología y Reproducción Humana* 28.1 (2014).
4. Rodríguez Álvarez JL., *et al*. "Leiomioma gigante de epiplón mayor". *Revista Cirugía Española* 67.5 (2000): 517-519.
5. Guzmán-Valdivia Gómez G and Alonso-Avilés V. "Quiste de mesenterio como causa de abdomen agudo. A propósito de tres casos". *Gaceta Medica De Mexico* 139.5 (2003): 505-507.
6. Vialat Soto., *et al*. "Quiste del mesenterio y epiplón en niños. Estudio de 20 años". Rev cubana Pediatr *Ciudad de la Habana* 76.3 (2004).
7. Álvarez, Rubén., *et al*. "Quiste de mesenterio y epiplón en niños. Estudio de 21 casos". *Pediatría de México* 11.1 (2009).
8. Cruz Mauricio., *et al*. "Revisión: quiste de mesenterio". *Revista Dolor Clínica Y Terapia* 6.3 (2009).
9. De Perrot M., *et al*. "Mesenteric cyst. Toward less confusion?". *Digestive Surgery* 17.4 (2000): 323-328.
10. Castillo Alejandro. "Linfangioma quístico de Mesenterio Reporte de un caso". *Nicaragua Pediátrica* 2nd edition. Epoca Mayo-agosto 1.2 (2013).
11. Pineda E., *et al*. "Metodología de la investigación". *OPS OMS* 2nd edition (1999).
12. Piura López, Julio. "Introducción a la Metodología de la investigación". 4th Edition. Managua, Nicaragua CIES – UNAN. (publicación científica del Centro de investigaciones y estudios de la salud) (2000).
13. Piuria López, Julio. "Metodología de la investigación científica: un enfoque integrador". Julio Piuria Lopez-1a ed- Managua: PAVSA (2006).
14. Sequeira Valinda., *et al*. "Investigar es fácil. Manual de investigación". *2nd edition Managua, Nicaragua* El amanecer, (1997).
15. Diccionario enciclopédico popular ilustrado Salvat (1906-1914).
16. Pita Fernández Salvador. "Determinación del tamaño muestral". Obtenido el 10 de marzo 2015 en (1996).
17. Pita Fernández, Salvador. "Uso de la estadística y la Epidemiologia en atención primaria". Obtenido el 10 de marzo en descriptiva de los datos (2015).

Volume 7 Issue 9 September 2018