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CASE REPORT

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Incidental Sigmoid Volvulus after a Ground-level Fall: An Unusual Case Report

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ABSTRACT

Sigmoid volvulus (SV) is an emergency that may cause bowel ischemia, necrosis, and mortality. It usually occurs in patients with chronic constipation, narrow mesentery, previous abdominal surgery, prolonged bed rest, and rarely blunt abdominal trauma. We present the case of a rare 80-year-old male patient who came for emergency service trauma service a same-level fall. The patient had no abdominal pain, previous abdominal surgery history, or known disease history. Pelvis X-ray showed femoral neck fracture and suspicion of volvulus. The emergency medicine team ordered an abdominal plain X-ray to rule out volvulus. The SV was diagnosed by abdominal X-ray and computed tomography. The patient was transferred to the operating room and underwent sigmoid colon resection and colostomy, and was discharged uneventfully. Why should an emergency physician be aware of this? Although a trauma patient may come without abdominal pain, the emergency physician should carefully examine him/her and be suspicious of unrelated conditions.

Keywords: Colon volvulus, emergency medicine, sigmoid volvulus, trauma

INTRODUCTION

Sigmoid volvulus (SV) is a twisting of the sigmoid colon around its mesentery. SV usually occurs in people after the fifth decade of life and has a 4/1 male-to-female ratio [1,2]. Sigmoid colon volvulus forms the most common type of all colon volvulus cases with 60-75% [2,3]. Its incidence was reported at 1.9% [4].

Anatomic tendency, chronic constipation, long-term laxative use, dolichosigmoid (extended sigmoid colon), narrow mesentery, diabetes, previous abdominal surgery, and prolonged bed rest are predisposing factors [2,5]. Patients present with intestinal obstruction symptoms and findings. SV accounts for 20-50% of bowel obstructions. The mortality changes from 10% to 50% [1]. SV may rarely occur after blunt abdominal trauma [6]. In this case, we report incidentally determined SV without abdominal pain or other bowel obstruction symptoms in a patient following the same level fall.

CASE PRESENTATION

An 80-year-old male patient came to the emergency service by ambulance because he fell on the same level. The patient had unintentional tremors in the upper and lower extremities. He was conscious but did not have time and place orientation, but cooperated with simple commands. Glasgow Coma scale score was 15. The upper extremities were in flexion in the elbow, the lower extremities were in flexion in the knee, and the legs were abducted bilaterally. There was no known disease or surgical history.

A physical examination of the abdomen showed mild tenderness and distention, but no rebound or rigidity. However, the patient did not experience any pain in the abdomen. Bowel sounds were normal. External trauma findings were not observed. The patient reported intermittent pain in the thorax and lumbar parts of the back, but not in the abdomen. There was also left hip pain with palpation. A detailed neurological examination could not be performed because of the patient's situation.

Blood pressure was 128/85 mmHg, pulse was 68 beats/min, temperature was 36.8 °C, and SpO_2 was 97%. Arterial blood gas parameter showed pH: 7.36, pO_2: 42.5 mmHg, pCO_2: 33.3 mmHg, lactate: 3.3 mmoL/L, and HCO_3: 19.1 mmoL/L on admission. Blood biochemistry analysis was remarkable for troponin T: 33 ng/L, creatinine: 2.88 mg/dL, international normalized ratio: 1.22, leucocytes: 11.6x10^3/µL, and hemoglobin: 11.7 g/dL.

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Chest and pelvic X-rays were obtained. There were no trauma or disease findings on chest images; there was noticeable doubt for sigmoid colon volvulus in the pelvis image (Figure 1A); and displaced multi-cracked fracture in the left femoral neck in the pelvis graph. Afterward, an abdominal plain X-ray was taken and showed high suspicion for SV (Figure 1B). Then, abdominal computed tomography (CT) was obtained and showed that the sigmoid colon had a redundant course and was located in the right upper quadrant. Dilatation reaching 7.5 cm in its widest part and air-fluid leveling were observed. At this level, a "whirl" sign was observed in the mesentery (Figure 2A, B). Findings were significant for the SV. Widespread dilatation was observed in loops proximal to this level. The transverse colon and cecum measured 7.5 cm. No free air in the abdomen and no perforation findings were observed. Edema and a dirty appearance were noticed in the mesentery. Oral intake was stopped, fluid resuscitation and nasogastric decompression were started, and the patient was referred to a gastroenterologist (GE). GE performed flexible endoscopic decompression and detorsion. After 8 h, the patient's symptoms and radiologic findings were not improved. Therefore, the patient was transferred to general surgery for advanced care and treatment. Sigmoid colon resection + Mikulicz colostomy were performed in the general surgery department. The patient was stable after the procedure. On the following 9th day, the patient underwent endoprosthesis surgery for a femoral fracture. The patient was discharged after inpatient care for seven days.

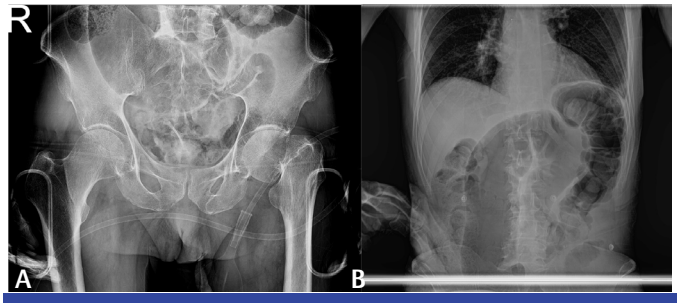

Figure 1. (A) Pelvis anterior-posterior X-ray image, (B) abdominal anterior-posterior X-ray image

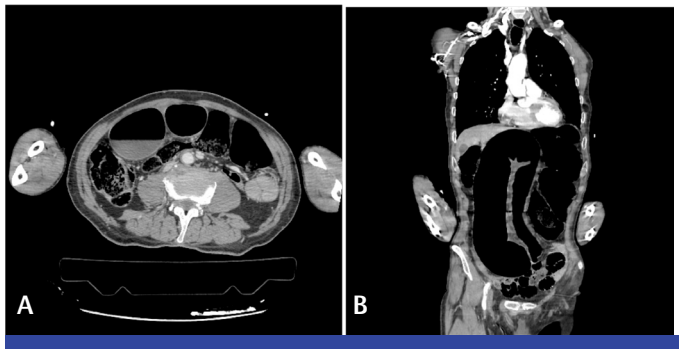

Figure 2. Abdominal computed tomography images. (A) Transvers plane, (B) coronal plane

DISCUSSION

The rotated part of the bowel causes bowel obstruction, decreases/stops intestine movements and blood supply, and leads to ischemia and necrosis. Nausea, vomiting, abdominal pain (usually diffuse non-specific), distended abdomen, tympanic abdomen on the percussion, decreased bowel sounds, decreased stool production, empty rectum, and peritonitis signs are the main symptoms and clinical findings of SV [2,7]. However, the absence of peritonitis findings does not rule out colon ischemia. Delayed complicated volvulus may cause translocation of the bowel flora to the bloodstream and result in sepsis. There are no pathognomonic laboratory features for SV. Elevated serum lactate levels may reflect bowel ischemia, which is associated with increased morbidity and mortality [8]. Abdominal X-ray is the initial diagnostic option. The "coffee bean" sign is the classic finding of SV in plain abdominal radiography [2,9]. CT is the gold standard for radiologic diagnosis. "Whirl" sign in CT is the pathognomonic sign for [10]. Proximal colonic dilation, disproportionate enlargement of the sigmoid colon, rectal decompression, absent rectal gas, and "split-wall" sign are other radiological features of SV in CT [11]. Enema is another option for diagnosis. However, it should be considered that is contraindicated if there is a perforation sign. Additionally, water-soluble enema is preferential to barium because it avoids chemical peritonitis [2]. The initial treatment is intravenous fluid resuscitation and decompression with a nasogastric tube. The study reported that flexible endoscopy for SV was successful in 510 (77.3%) patients [12]. Urgent endoscopic decompression of the colon and volvulus detorsion are strongly recommended for patients without findings of colon ischemia or perforation. It was reported to have 60-95% effectiveness, 4% morbidity, and 3% mortality [2]. Avoiding surgery is recommended for elderly patients because of the high morbidity and mortality risk. Hemodynamically unstable patients, those who have signs of ischemia or perforation, those who have failure in endoscopic decompression, or those who observed a gangrenous colon during the endoscopy should urgently go to the operation room [3]. In this study, the first treatment was endoscopy. Surgery was then planned because of no improvement in the patient's condition.

There are very few reports of SV with non-specific findings after trauma. In this case, we reported an incidentally found SV with non-classic symptoms after a ground-level fall and discussed its management in the literature.

"Take home" clinical message to emergency physicians colleagues is that if there is a suspicion of SV in asymptomatic patients, a plain abdominal X-ray should be ordered to rule out SV to avoid more morbidity or mortality.

Ethics

Informed Consent: Informed consent was obtained from the participant before inclusion in the case report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Z.K., E.S., M.S.K., Concept: Z.K., E.S., M.S.K., Design: Z.K., M.S.K., Data Collection or Processing: Z.K., E.S., G.H., M.M., Analysis or Interpretation: Z.K., E.S., G.H., M.M., M.S.K., Literature Search: Z.K., E.S., G.H., M.M., Writing: Z.K., E.S., G.H., M.M., M.S.K.

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CASE REPORT

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Conus Medullaris Metastasis in a Patient with Triple-positive Breast Cancer

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ABSTRACT

Although brain metastasis is usual in breast cancer, metastasis of the conus medullaris is extremely infrequent. Herein, we present the first case of triple-positive subtype breast cancer with conus medullaris metastasis. The patient admitted with paraplegia and neurological dysfunction improved after the removal of the mass, followed by radiotherapy. We also discuss the clinical characteristics and available therapies for conus medullaris metastases.

Keywords: Breast cancer, conus medullaris, metastasis

INTRODUCTION

As a result of the increasing cancer prevalence, more spinal metastases are encountered in cancer patients [1,2]. Intramedullary spinal cord metastases (ISCM) are uncommon and affect only 0.1%-0.4% of cancer patients [3]. Conus medullaris metastases are rare compared with spinal cord metastasis because of their small spatial extent and lower tissue perfusion. It is most commonly reported in patients with lung cancer. Second on the list is breast cancer [4]. Estrogen receptor (ER)-negative and human epidermal growth factor receptor 2 (HER2)-positive breast cancers are more prone to liver, lung, and brain metastases than the triple-positive type [5]. Similar data are available for ER-negative/HER2-positive patients with conus medullaris metastasis [6]. In this study, we report the first case of ER-positive/HER2-positive subtype breast cancer that spread to the conus medullaris.

CASE PRESENTATION

A 61-year-old woman was referred with a left breast mass in 2015. Ultrasound showed a 6x5 cm irregular hypoechoic mass. Tru-cut biopsy revealed grade-II HER2-positive (score 3+), ER 90%, and progesterone receptor (PR) 80% positive invasive ductal carcinoma with 25% Ki-67 proliferation index. Following this, an axillary dissection and a left modified radical mastectomy were performed, and the tumor was staged as T3N2M0. The patient's refusal of treatment precluded the application of adjuvant or neoadjuvant chemotherapy and radiotherapy (RT).

In 2018, the patient experienced an epileptic episode and numbness in the left arm. Cranial magnetic resonance imaging (MRI) revealed a metastatic lesion in the right frontal convexity along the cortical-leptomeningeal face, accompanied by dural thickening, cerebral edema, and two points of cortical-subcortical diffusion restriction suspected for metastasis (Figure 1). After 30 Gy whole brain RT in 10 fractions, 6 cycles of docetaxel and trastuzumab plus pertuzumab were administered. Trastuzumab plus pertuzumab and anastrozole were started as maintenance therapy. With RT and anti-HER2 therapy, the patient's headache disappeared, numbness in the left arm improved, and she did not have epileptic seizures again.

In 2021, the patient presented with paraplegia and bowel dysfunction while receiving maintenance treatment. She complained of constipation, abdominal pain, spasm, and urinary retention. Muscle strength in the bilateral lower extremities was 3/5 in the distal and 3/5 in the proximal; in the upper extremities, it was 4/5 in the distal and 5/5 in the proximal. The lower extremities were bilaterally hypoaesthetic and deep tendon reflexes were hypoactive. An intramedullary-enhancing metastatic lesion measuring 1.4 x 2.6 x 1.2 cm in

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diameter was detected by spinal MRI (Figure 2). Neurosurgery performed an immediate laminectomy and tumor excision with no postoperative sequelae. Histopathological examination revealed a cellular neoplasm with extensive calcification and an infiltrative pattern consistent with breast carcinoma metastasis. Immunohistochemical staining revealed that cells were diffusely strongly positive for ER, negative for PR, and positive (3+) for HER2. Subsequently, 30 Gy RT was administered to the T11-L2 region in 10 fractions. With the postoperative RT and subsequent physiotherapy program, the patient's muscle strength increased to 5/5 in all four limbs, sensation improved, and bowel functions returned to normal. No recurrence was detected during the 6-month follow-up of the patient on trastuzumab plus pertuzumab and anastrozole maintenance therapy.

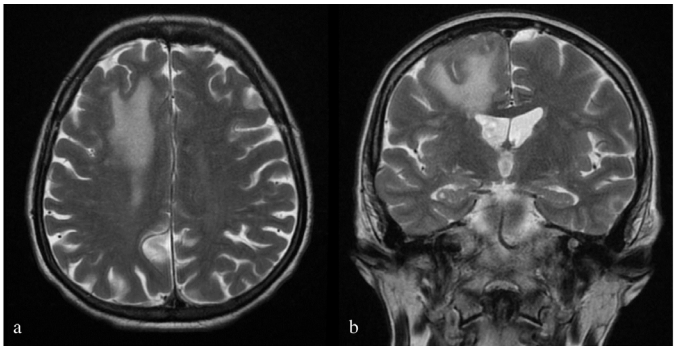

Figure 1. Magnetic resonance imaging of the brain. T2-weighted axial (a) and coronal (b) images showed a metastatic lesion in right frontal convexity along the cortical-leptomeningeal face, accompanied by dural thickening, and white matter edema in the adjacent frontal lobe parenchyma. Two points of cortical-subcortical diffusion restriction suspected for metastasis were observed in the right posterior parietal lobe

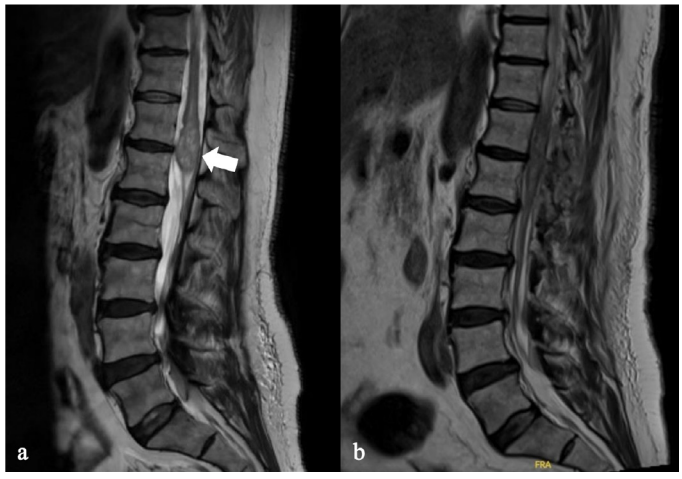

Figure 2. Magnetic resonance imaging (MRI) of the spine. (a) An enhancing lesion in the conus medullaris (arrow). (b) Postoperative MRI of the spine performed two months after radiation treatment

DISCUSSION

ISCM is underestimated in clinical practice, especially on pre-MRI dates. The incidence of ISCM increases with increasing cancer morbidity and prolongation of patient survival [7]. Conus medullaris metastasis has rarely been reported as a case series in patients with breast cancer of various hormonal and genetic status [8,9]. For the first time, conus medullaris metastasis was detected in our patient with ER-positive, PR-positive, and HER2-positive breast cancer.

Most patients with ISCM usually present with myelopathy as the first sign, such as hemiparesis and hemiparesthesia [10]. Urinary and bowel dysfunctions can also be encountered. Although primary ISCM tumors present with slower progression, metastatic lesions often present with neurological deficits or rapidly developing complete paraplegia [11,12]. Our patient who presented with paraplegia and bowel dysfunction had a clinical presentation similar to that of a case series in the literature [4,7].

Although RT, chemotherapy, and surgical resection are clinically viable options, the management of ISCM remains controversial. RT is the first-line treatment for ISCM for radiosensitive metastases such as small cell lung carcinoma, breast cancer, or lymphoma [13]. However, the response to RT applied after the development of paraplegia was weak. Surgical treatment can be performed in selected patients. Kalayci et al. [7] suggested that early surgical resection resulted in regression of neurological deficits and improved quality of life in these patients. In our patient, surgery was preferred in the early period because of paraplegia. Because patients with ISCM may develop permanent neurological deficits, they should be evaluated promptly. Appropriate treatment should be administered as RT, chemotherapy, or surgery [14]. Otherwise, irreversible neurological damage that affects patients' quality of life may develop.

Compared with other forms of breast cancer, HER2-positive breast tumors typically tend to be more aggressive [14]. Although central nervous system (CNS) metastases are more common in HER2-positive breast cancers, data on conus medullaris metastases are limited. In this case with CNS metastasis, conus medullaris metastasis occurred during follow-up. In the case series of 7 breast cancer patients by Hsu et al. [15], four patients had CNS, bone, or lung metastases at the time of ISCM diagnosis. In our patient, CNS metastasis developed before ISCM. Because most patients are symptomatic, information about the necessity of spinal imaging in asymptomatic breast cancer patients with CNS metastases is limited. However, early diagnosis can reduce morbidity by providing an early treatment. Therefore, it may

be useful to question the neurological symptoms carefully and not skip the neurological examination.

In conclusion, the presented case demonstrates the feasibility and optimal response of surgery and RT in breast cancer patients with conus medullaris metastasis. It should be kept in mind that conus medullaris metastases may develop in addition to CNS metastases in patients with HER2-positive breast cancer. Because this patient presented with neurological symptoms, it was easy to detect conus medullaris metastasis. However, there is a need for case series with large numbers of HER2-positive breast cancers with ISCM detected by imaging in the asymptomatic period.

Ethics

Informed Consent: Written informed consent for publication of their details was obtained from the patient.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: A.A., A.I.I., Concept: A.A., H.C.Y., N.K., Design: A.A., H.C.Y., N.K., Data Collection or Processing: A.A., R.I., A.I.I., Analysis or Interpretation: A.A., R.I., N.K., Literature Search: A.A., Writing: A.A., R.I.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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CASE REPORT

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Early-onset Neonatal Septicemia Caused by *Staphylococcus lentus*: A Rare Case Report with Literature Review

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ABSTRACT

Coagulase-negative *Staphylococci*, previously considered harmless, are now recognized as significant pathogens in neonatal sepsis. *Staphylococcus lentus*, part of the *Staphylococcus sciuri* group, is predominantly found in animals but can colonize humans and cause severe infections. These microorganisms are known for their high antibiotic resistance, with methicillin resistance rates exceeding 70%. Vancomycin is the preferred treatment for neonatal sepsis caused by these pathogens. This case report aims to present a rare case of early-onset neonatal sepsis caused by *Staphylococcus lentus*, a pathogen not commonly associated with humans.

Keywords: Newborn, septicemia, *Staphylococcus lentus*

INTRODUCTION

Neonatal sepsis refers to a severe illness in newborns caused by bacterial, viral, or fungal infections, leading to significant morbidity and mortality. It is predicted that around 3.0 million instances of sepsis occur in newborns, while approximately 1.2 million cases affect children [1]. These findings validate the widespread occurrence and high mortality rate associated with sepsis in neonates and children worldwide. It is the third leading cause of neonatal deaths, following complications related to preterm birth and intrapartum issues [2]. In cases of early-onset neonatal sepsis, where symptoms emerge within the first 72 hours after birth, the main pathogens responsible for infection are typically transmitted from the mother to the newborn. The main pathogens in this context are group B *Streptococcus* and *Escherichia coli (E. coli)*, while coagulase-negative *Staphylococci* (CoNS) are not frequently implicated but still have an influence on this condition. Furthermore, various bacteria, including *Streptococcus pneumoniae*, *Streptococcus viridans, Listeria monocytogenes, Haemophilus influenzae, Staphylococcus aureus*, and *Klebsiella* species, can play a role in the development of early-onset neonatal sepsis. In developing countries, early-onset neonatal sepsis is frequently caused by Gram-negative bacteria like *Klebsiella*, *Enterobacter*, Acinetobacter species, and *E. coli* [3]. This case report presents a case of early-onset neonatal sepsis associated with *Staphylococcus lentus*. There is a lack of literature describing this microorganism as a cause of neonatal sepsis.

CASE PRESENTATION

The female infant, born to a 22-year-old mother who is gravida 1 and para 1, was delivered via cesarean section at 37 weeks of gestational age. The baby weighted 3100 grams at birth and there was a blood group incompatibility issue. On the second day of life, during a routine physical examination, the baby was found to have dark blueish skin discoloration and sclerema neonatorum on legs (Figure 1). However, the baby was active with good muscle tone, and her vital signs were stable. The infant was breastfed and did not show any signs of respiratory distress or dysfunction in other organ systems. The mother had a medical history of multiple urogenital infections that had been inadequately treated due to anaphylactic reactions to antibiotics. In the neonatal intensive care unit (NICU), the complete blood count (CBC) showed a leukocyte count of 5.600x10^9/L, platelet count of 158.000x10^9/L, hemoglobin level of 17.2 g/dL, absolute neutrophil count of 3696, immature to total neutrophil ratio of 0.24, and an elevated C-reactive protein (CRP) level of 19.08 mg/L (Figure 2). In the initial CBC taken at 6 hours of life, the platelet count was 320.000x10^9/L, leukocyte count was 14.780x10^9/L, and the direct Coombs test was positive. A peripheral hemoculture was obtained

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before starting vancomycin and amikacin for suspected early-onset neonatal sepsis, considering the mother's penicillin allergy. On the second day of life, the baby developed bloody stool and severe thrombocytopenia (platelet count of 22.000x10^9/L), and meropenem was added to the treatment regimen. Phototherapy was administered to the neonate with the purpose of treating indirect hyperbilirubinemia. On the fourth day of life, *Staphylococcus lentus* was identified in the peripheral hemoculture drawn upon admission to the NICU. The antibiogram analysis revealed resistance to cefoxitin, indicating that this pathogen is classified as resistant to beta-lactam antibiotics. From the fourth day of the baby's life onwards, there was a gradual increase in platelet count, while CRP levels steadily declined to 3.0 mg/L. The administration of antibiotics was maintained for a duration of seven days. As a result of positive clinical progress, normalization of the platelet count, and eradication of bacteria in the blood culture, the infant was discharged on the eighth day of life.

Figure 1. Skin appearances before and after antibiotic treatment

DISCUSSION

CoNS, previously considered harmless and non-pathogenic, are now recognized as one of the leading pathogens responsible for infections in this vulnerable population [4]. Due to the low occurrence of antibiotic-resistant CoNS in the general population, it is commonly assumed that neonates acquire colonization with antibiotic-sensitive CoNS after birth. However, the mechanisms behind the development of skin and gut colonization with resistant CoNS during NICU hospitalization remain unknown [5]. Neonates have been found to have qualitative and quantitative deficiencies in complement factor C3 and immunoglobulin G. These deficiencies directly contribute to the increased risk of CoNS sepsis in neonates [6]. Although neonatal CoNS infections are seldom fatal, they

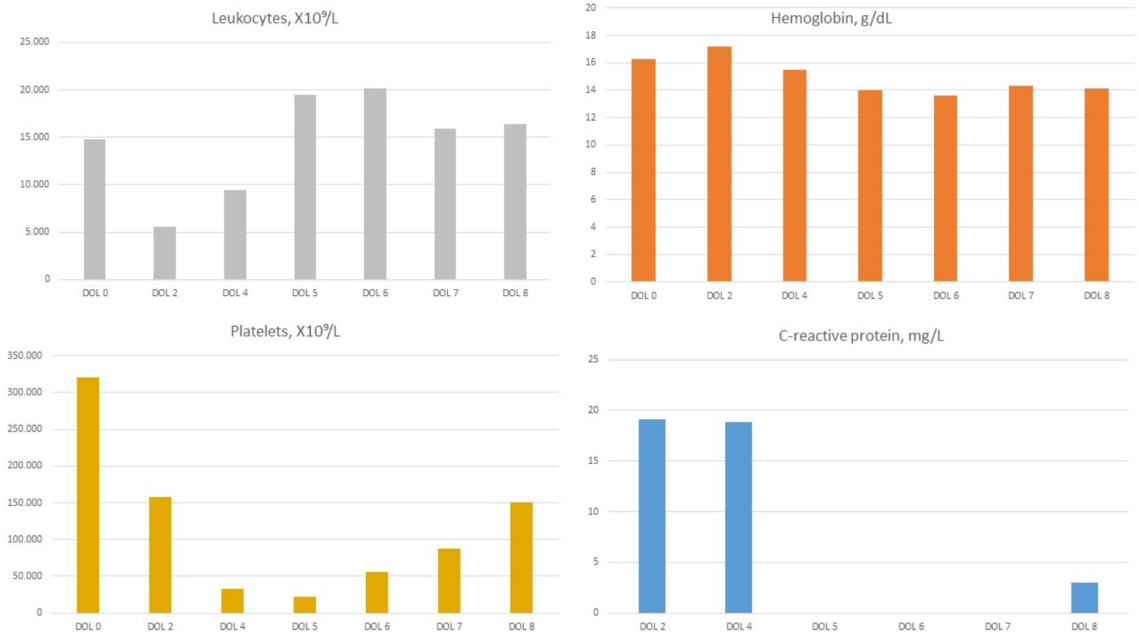

Figure 2. Laboratory investigations of the newborn

can lead to considerable morbidity, particularly in extremely low birth weight infants [7]. The *Staphylococcus sciuri* group, consisting of *S. sciuri, S. lentus, S. vitulinus,* and *S. pulvereri,* are primarily found in animals. However, they can also colonize humans, and their presence in various human clinical samples has been documented. Notably, *S. sciuri* has been linked to severe infections in humans, including endocarditis, peritonitis, septic shock, and wound infections [8]. Several researchers have reported the isolation of *S. sciuri* and *S. lentus* from urine samples [9]. These microorganisms are widely recognized for their high antibiotic resistance, with methicillin resistance rates surpassing 70% in many medical centers. Consequently, vancomycin has emerged as the preferred antimicrobial therapy for targeted or empirical treatment of neonatal sepsis caused by these pathogens [10]. *Staphylococcus lentus* is one of Gram-positive, coagulase-negative bacteria which is rare in neonatal population. *Staphylococcus lentus* is predominantly an animal pathogen and has been isolated from wild and farm animals, especially food-producing animals. It is rarely pathogenic in human being, but has been associated with a variety of infections, such as endocarditis, peritonitis, septic shock, urinary tract infection, sinusitis, splenic abscess and wound infections [11-14]. It is considered that *S. lentus* to be a genuine pathogen that should be taken seriously. However, we believe that determining the clinical significance of an *S. lentus* infection requires a case-by-case analysis and clinical judgment.

An early neonatal sepsis caused by *Staphylococcus lentus* as a pathogen has never been reported before. This pathogen is often resistant to multiple antibiotics and vancomycin therapy should be effective especially in those neonates with maternal penicillin allergy history. This case shows that even rare microorganism which mostly seen in animals could be isolated in neonates.

Ethics

Informed Consent: Written informed consent was obtained from the parents for the publication of this report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: N.R., S.M., S.E., Concept: S.E., Design: S.M., Data Collection or Processing: N.R., Analysis or Interpretation: S.E., Literature Search: S.M., Writing: N.R., S.E.

Conflict of Interest: No conflict of interest was declared by the authors.

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CASE REPORT

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Very Rare Complication of Foreign Body Ingestion in a Two Year Old Girl: A Case Report

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ABSTRACT

Foreign body ingestion is a common problem in children under 5 years of age and is one of the main indications for endoscopy. Determining the indications and timing of intervention requires assessment of patient size, type of object ingested, location, clinical symptoms, time since ingestion, and myriad other factors. Here we present a case of the ingestion of multiple sewing needles that migrated to the omentum and liver.

Keywords: Foreign body, needle, endoscopy, pediatric surgery

Introduction

Cases of foreign body (FB) ingestion in childhood are common and most are accidental. Over 75% of the more than 100,000 cases of FB ingestion seen in the United States each year occur in children between six months and three years of age [1]. The objects most commonly ingested include coins, toys, batteries, magnets, and sewing pins. Although most ingested objects do not cause a serious health problem, the ingestion of objects such as batteries, multiple magnets, and pins requires immediate intervention. The procedure for removing an FB varies according to the type of FB, its location in the gastrointestinal (GI) tract, and the time since ingestion. In some cases, FB ingestion can go unnoticed and is detected incidentally. Here we present a case of the ingestion of multiple sewing needles that migrated to the omentum and liver.

CASE PRESENTATION

A 2-year-old girl was brought to another health center for cough and was referred to us upon the detection of three needle-like FBs at the level of the stomach on direct X-ray. The patient had no active complaints other than cough and had a history of previous hospitalization due to pneumonia at one year of age. On physical examination, her temperature was 36.6 °C, respiratory rate was 18/min, blood pressure was 90/60 mmHg, and oxygen saturation was 98%. On abdominal examination, the patients abdomen was soft and painless on palpation, with no defense, rebound, or organomegaly. The lower respiratory tract examination was normal, and the patient's cough was thought to be related to an upper respiratory tract infection.

Abdominal X-ray taken in our hospital confirmed the presence of FB at the stomach level (Figure 1), and esophagogastroduodenoscopy was performed. No FB, bleeding focus, or erosion in the stomach, duodenal bulb, or second part of the duodenum was detected on endoscopy. Because the patient had no active complaints, observation with regular abdominal X-rays was planned. X-rays obtained on days 3 and 5 of follow-up showed that the FBs were in the same location.

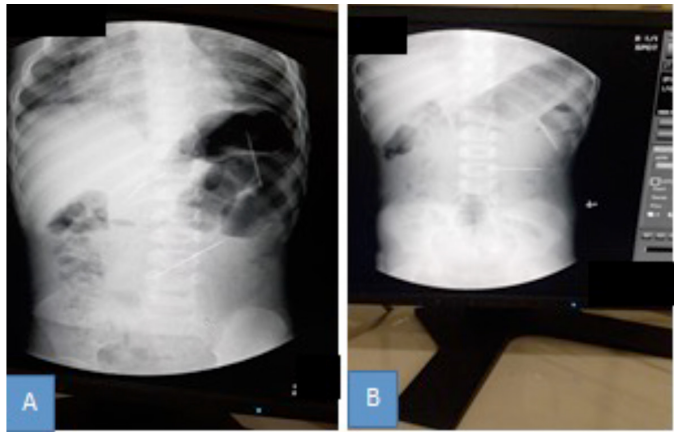

Figure 1. (A) X-ray taken at admission, B) X-ray on day 5

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Laparotomy was planned on day 7 of follow-up because it was not known when the needles were swallowed and the FB had not changed location on serial X-rays. The abdomen was entered through a left transverse incision; however, no FB was observed initially. Intraoperative X-ray revealed four FBs. Two of the FBs were removed from the omentum and the other two were removed from the liver parenchyma, and all were found to be sewing needles (Figure 2). No abscess or bleeding focus was observed at or near the location of the FB during surgery. The patient was discharged in good condition on postoperative day 5.

DISCUSSION

FB ingestion can sometimes cause serious health problems. In general, most children who ingest FBs are under the age of 5 years [1]. In European-based studies, the incidence of ingesting sharp objects in children was reported to be approximately 11% [2]. In the literature, conventional X-ray evaluation from the mouth to the anus is recommended in children who swallow FBs, even if they have no complaints [3]. In general, 100% of metal objects can be visualized by routine X-ray. The average passage time of an ingested FB through the GI tract is 3.6 days [4]. Most sharp objects usually pass through the GI tract without problems [5]. Prior to the development of modern surgical and endoscopic techniques, the rates of morbidity and mortality associated with the ingestion of sharp objects were reported as 35% and 26%, respectively [6]. After 2010, complication rates decreased with the development of diagnostic and treatment algorithms [7].

Delayed intervention increases the risk of complications. Symptoms of pain and dysphagia are common when the FB is located in the upper/middle esophagus. However, up to 50% of patients may be asymptomatic for weeks, even in cases of proximal intestinal perforation [8]. In the literature, it has been emphasized that piercing objects should be removed by laparotomy if they remain in the same place for more than 5-7 days, even if the patient is asymptomatic [9]. In this study, the patient was asymptomatic despite perforation, and the needles were detected on incidentally obtained X-ray. It is known that 15-35% of sharp objects perforate the GI tract [10]. Therefore, when the ingestion of a sharp FB is suspected, emergency endoscopy should be performed even if no FB is seen on direct X-ray.

FBs in the GI tract are usually removed endoscopically. Endoscopic removal is recommended for sharp objects in the stomach (>4-5 cm for children, >6-10 cm for older children) [11]. When the FB is located distal to the ligament of Treitz, it should be surgically removed in symptomatic and asymptomatic patients if progression is not observed on serial X-rays [12]. Pointed FBs that penetrate through the intestinal wall as a result of GI peristalsis can lead to complications in the adjacent organs. Complications reported include perforation, extraluminal migration, abscess, peritonitis, intraperitoneal fistulization, appendicitis, penetration of the liver, bladder, heart, and lung, common carotid artery rupture, aortic esophageal fistula, and death [13,14]. It is extremely rare for a sharp FB to penetrate the intestinal wall and enter the liver because it is an intraperitoneal organ that is not continuous with the intestinal lumen [15]. These cases primarily occur in adults (90%) and are rarely seen in children [16]. Most ingested FBs are managed by waiting for spontaneous elimination, but 10-20% can be removed endoscopically, and less than 1% require surgery [17]. In this study, standing X-ray of the abdomen was followed by endoscopy, which revealed no FB or related complications. All ingested needles were found to have crossed the GI tract by penetrating the wall of the stomach or small intestine into the omentum and liver parenchyma, but no complications such as bleeding, peritonitis, or abscess were detected.

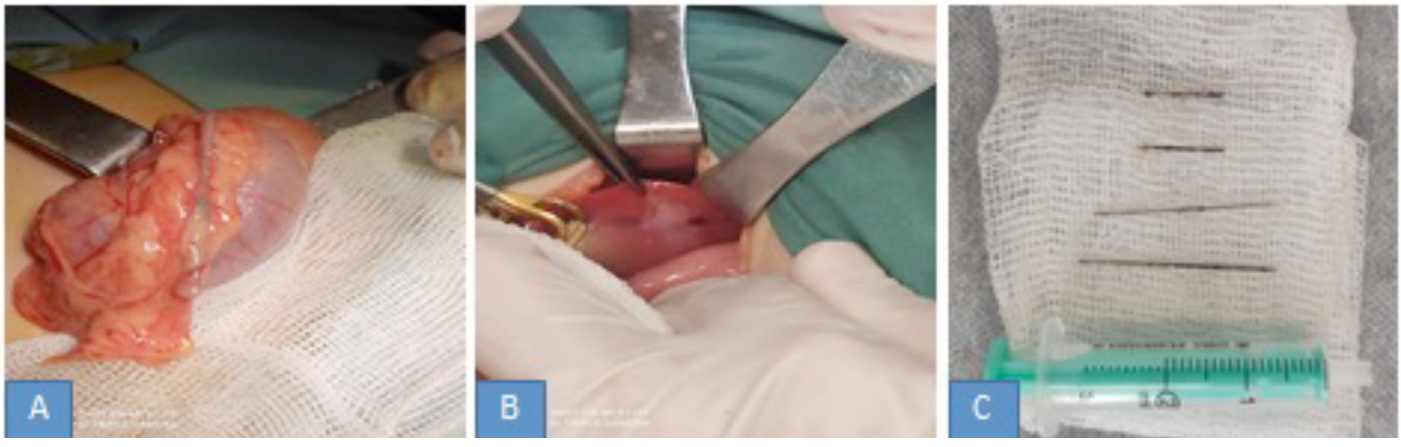

Figure 2. (A) Foreign body in omentum, (B) foreign body in liver, (C) foreign bodies after removal

Patients with a history of ingesting FBs, such as sewing needles or pins, that remain in the same location for a week should be carefully monitored. Because of the risk of perforation with sharp and pointed FBs, they should be removed endoscopically if possible or otherwise by surgery.

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Ethics

Informed Consent: Informed consent was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: A.T., U.M., Concept: U.M., Design: U.M., Data Collection or Processing: A.T., Analysis or Interpretation: A.T., Literature Search: A.T., Writing: A.T., U.M.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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CASE REPORT

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Celiac Disease's Early Diagnosis: A Case Report

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ABSTRACT

Celiac disease (gluten-sensitive enteropathy) occurs because of an immune-mediated reaction to gluten in genetically predisposed individuals. In clinical practice, there are often difficulties in diagnosing celiac disease, particularly in patients without specific gastrointestinal complaints. Rarely, celiac disease can present with acute symptoms, delaying diagnosis and exposing these patients to possible life-threatening complications. In this article, we present a review of the literature and a case report demonstrating the usefulness of intestinal ultrasound in the primary diagnosis of celiac disease, followed by complete confirmation of the diagnosis by enteroscopy with biopsy and serologic diagnostics.

Keywords: Celiac disease, gluten-sensitive enteropathy, intestinal ultrasound

INTRODUCTION

Celiac disease is a multisystem immune-mediated disease caused by gluten ingestion in genetically predisposed individuals. The primary target organ of the autoimmune response against the tissue transglutaminase (TG2) enzyme is the small intestine, where a gluten-related inflammatory cascade causes progressive mucosal damage leading to severe villous atrophy. The gold standard for diagnosing celiac disease and/or gluten-related hypersensitivity is endoscopic examination with a series of multiple biopsies (to detect Marsh-Oberhüber duodenal mucosal atrophy) and serological confirmatory methods, including antibodies to TG2, deamidated gliadin peptides, and gliadin [1]. From a clinical perspective, celiac disease is a multifaceted chronic disease that exhibits several intestinal (ranging from mild irritable bowel syndrome-like symptoms to severe malabsorption symptoms) and extraintestinal manifestations affecting multiple tissues and organs (eg. skin, endocrine/exocrine glands, nervous system, joints/muscles). Only 20-30% of patients suffer from the ordinary active form of the disease (malabsorption, diarrhea, overall weakness anemia weight loss). Non-diagnosed, non-active forms of the disease constitute up to 70-80% of cases in adults [2]. Delay in diagnosis is common in clinical practice, especially in patients without gastrointestinal complaints; the median delay in diagnosis was 2.3 months for the group with gastrointestinal symptoms and 42 months for the non-gastrointestinal group ($p<0.001$) [3]. Therefore, celiac disease remains a difficult condition to diagnose, leading to a significant delay in initiating appropriate therapy and an increase in associated morbidity [4].

CASE PRESENTATION

A 47-year-old woman complained of diarrhea up to 5-6 times a day without pathological impurities during defecation, bloating, and general weakness. The patient reported that the complaints had been bothering her for 5 years; the onset of the disease was associated with stress. The patient did not note a clear connection between symptoms and food intolerance. She was examined several times and received symptomatic therapy. Exacerbations were associated with stressful situations. The patient self-stopped the symptoms by taking loperamide. During the physical examination, signs of skin and mucosal paleness and abdominal bloating were detected. The NRS 2002 scale was used to evaluate the nutritional status of the patient; the total score was 2 points. From the anamnesis of life, the

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patient suffered from viral hepatitis A in childhood. At the time of the examination, she was periodically observed by a gynecologist for uterine myoma. Laboratory studies revealed mild anemia (hemoglobin: 96 g/L), thrombocytosis (platelets: 490 x 10 x 9/L), elevated D-dimer -1139 µg/mL, erythrocyte sedimentation rate acceleration up to 21 mm/h. In addition, the patient had hypoproteinemia (total protein: 57.12 g/L). Studies of stool samples revealed mild excretory pancreatic insufficiency (pancreatic elastase: 159.26 µg/g) and normal levels of calprotectin (11.86 ng/m). Taking into account the duration of the disease and violation of nutritional status, the patient was hospitalized in the therapeutic department for additional examination and selection of therapy. During hospitalization, the infectious nature of the pathology was excluded (fecal tests). Routine abdominal ultrasound without any features The patient was decided to undergo an intestinal ultrasound, which revealed an expansion of the ileal cavity with clearly defined circular folds - jejunization (Figure 1), in connection with which the patient was suspected of enteropathy.

For a more accurate assessment of the condition of the gastrointestinal tract, the patient underwent endoscopic examinations with biopsy sampling. Ileocolonoscopy revealed sluggish peristalsis in the colon in all its departments without mucosal defects. However, thickening and shortening of the villi in the ileum were observed in the small intestine, and more proximal, in the jejunum, confluent lesions with low, inactive villi were visualized, indicating focal atrophy of the small intestine. On esophagogastroduodenoscopy with enteroscopy, the esophagus and stomach were unremarkable. The mucosa of the duodenal bulb was thinned, and the velvet was sharply smoothed out with linear areas of atrophy; this process extended to the subbombous sections. The small intestine was examined down to the lower third of the jejunum. The mucosa was thinned over the entire examined area, and the villi were thickened, low, and immobile (Figure 2). Folding was preserved. Based on the described picture, an endoscopic conclusionis as follows: "atrophic duodenitis, jejunitis" was made, and biopsy material was taken.

After endoscopic examination, celiac disease was suspected, so serological diagnostics were performed, as a result of which positive antibodies to TG2, gliadin, and endomysium were detected.

On pathohistological examination of biopsy specimens of the jejunum, the villi were dilated, flattened, and lined with rimmed enterocytes with a moderate number of goblet cells; the number of intraepithelial lymphocytes was up to 50 per 100 enterocytes; the ratio of the height of the villi to the depth of the crypts was 2:1; the crypts were deep and filled with border enterocytes, goblet cells, and Paneth cells; the lamina propria was moderately infiltrated by lymphocytes and plasmocytes with an admixture of eosinophils [4]. Histopathological conclusion: "the morphological picture of chronic atrophic lymphocytic duodenitis corresponds to gluten-sensitive enteropathy type 3b, according to Marsh-Oberhuber (Figure 3)." Thus, the patient was diagnosed with celiac disease and was transferred to a gluten-free diet and discharged with further recommendations. Taking into account the duration of the disease, systemic steroids (methylprednisolone) were prescribed for up to 12 weeks.

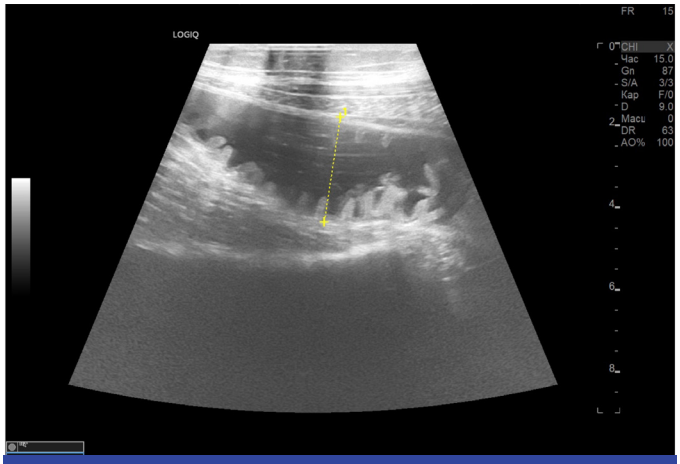

Figure 1. Fragment of the ileum, with a slightly enlarged lumen and clearly defined circular folds- jejunization; during fasting, an increased amount of fluid in the lumen of the small intestine and its increased peristalsis are determined

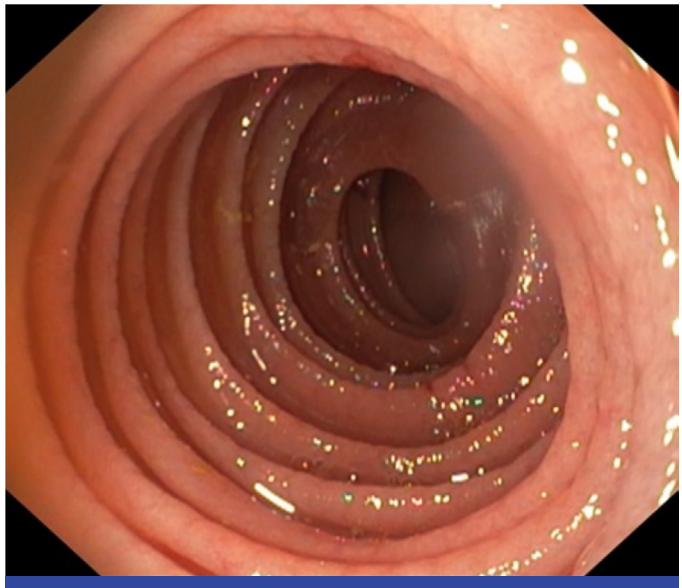

Figure 2. Endoscopic photo of the small intestine showing villous atrophy

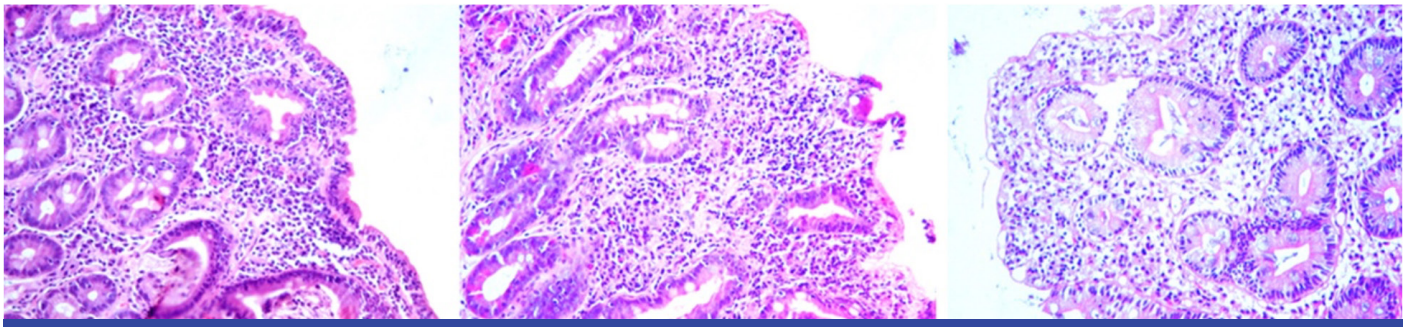

Figure 3. Biopsy of the jejunum, magnification 200. Staining: hematoxylin and eosin. In these preparations, there is an expansion of the lamina propria due to abundant lymphoplasmacytic infiltration, a decrease in villi, and an increase in intraepithelial lymphocytes

DISCUSSION

Today, ultrasound examination of organs is widely used in medicine for screening before the appointment of invasive and expensive diagnostic procedures. Intestinal ultrasound is mainly used to diagnose and monitor patients with inflammatory bowel disease. Various ultrasound features associated with celiac disease have already been described in the literature, and the recent advent of high-frequency transducers (5-12 MHz) has made it possible to assess the condition of the loops of the small intestine and abdominal cavity using this method [5]. Using ultrasound as the first (non-invasive) line of diagnosis, including in clinically asymptomatic patients with untreated celiac disease, it is possible to determine several sonographic signs characteristic of this disease [6]:

• Increased fluid content in moderately dilated intestinal loops (25-35 mm) with fasting hyperperistalsis;

• Slightly thickened wall of the small intestine (3-5 mm) and thickened cuspid valves, most often observed in patients with untreated celiac disease;

• A decrease in the number of folds of the jejunum and an increase in the folds of the ileum (jejunization of the ileum);

• Periodic invasion due to hyperperistalsis;

• Presence of slightly enlarged mesenteric lymph nodes.

Therefore, intestinal ultrasonography may help avoid delaying the diagnosis, especially in patients with atypical clinical manifestations of celiac disease. This is a promising method with high sensitivity and specificity. Although the gold standard for diagnosing celiac disease is histological confirmation of bowel involvement in serologically positive individuals, expanding the range of diagnostic options for clinically asymptomatic patients with untreated celiac disease is possible through ultrasound diagnostics. The limitation may be the lack of experts with the skill of ultrasound diagnostics of the pathology of the abdominal cavity and intestines.

Ethics

Informed Consent: Obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.F., Z.K., A.T., G.K., J.K., A.K., I.K., E.E., Concept: M.F., Design: G.K., Data Collection or Processing: Z.K., Analysis or Interpretation: A.T., Literature Search: M.F., Writing: Z.K., A.T.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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CASE REPORT

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J Cau Med Sci 2023;1(3):51-52

Atypical Craniopharyngioma

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ABSTRACT

Magnetic resonance (MR) is the preferred method for diagnosing craniopharyngiomas. It best demonstrates the morphology of the tumor, its extent, and its association with surrounding structures. Variable appearance of craniopharyngiomas on MR images reflects diverse histologic appearance. We present a case of an atypical craniopharyngioma with high signal intensity in all MR sequences.

Keywords: Craniopharyngioma, parasellar region, magnetic resonance imaging

INTRODUCTION

A craniopharyngioma is a benign slow-growing dysontogenetic tumor of the central nervous system derived from the Rathke pouch epithelium and usually located in the sellar and parasellar regions. Craniopharyngiomas are rare and account for 3% of all intracranial tumors, with a rate of 0.5-2 cases per million per year. It has a classical bimodal age distribution: first peak incidence between 5 and 14 years of age and second peak incidence in adults older than 65 years. The incidence rate does not correlate with gender, race, or geographical location [1]. The association with medical conditions or genetic predispositions has not yet been verified. Magnetic resonance imaging (MRI) is the preferred method for identifying craniopharyngiomas and evaluating their location, tumor extension, and relationship with surrounding structures. Arriving at a correct diagnosis can be challenging because craniopharyngiomas have a very diverse appearance on MR scans because of their complex histological structure [2].

CASE PRESENTATION

A 49-year-old man presented with chronic headaches, nausea, and dizziness for 4 months. MRI demonstrated a 61 × 57 × 42 mm cystic mass with a lobulated configuration located in the parasellar region extending to the pontine cistern and the inferior part of the third ventricle. Contrast-enhanced T1-weighted image demonstrates heterogeneous enhancement of the solid parts of the lesion. The pons and midbrain were compressed and displaced posteriorly. The basilar artery was encased, and the circle of Willis was compressed by the tumor. The tumor appeared to have high signal intensity on all T1-, T2-, and FS T1-WI. Although the inferior part of the third ventricle was compressed, there was no evidence of obstructive hydrocephaly (Figure 1).

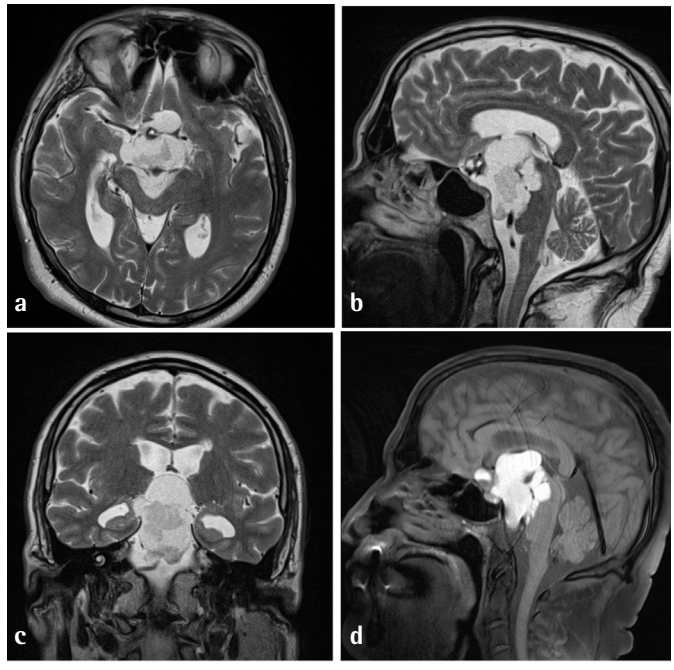

Figure 1. (a-c) Axial, sagittal, and coronal T2-weighted images. (d) Sagittal fat-saturated T1-weighted images demonstrate a large cystic mass in the parasellar region, which shows high signal intensity in all sequences

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DISCUSSION

There are two distinct pathologic types of craniopharyngiomas, each with its own theory of origin. The adamantinomatous type is thought to originate from remnant ectodermal cells of the craniopharyngeal duct, which are formed as a result of the migration of Rathke's pouch, a diverticulum arising from the embryonic buccal cavity that gives rise to the anterior pituitary gland (adenohypophysis). The origin of squamous papillary craniopharyngiomas is explained by metaplastic theory, which suggests that they develop because of metaplasia and further proliferation of residual embryonal adenohypophyseal cells of the pars tuberalis of the pituitary. The second type predominantly occurs in adults, whereas the first can affect all age groups [3]. Macroscopically, craniopharyngiomas are solid and/or cystic lesions; the adamantinomatous type often contains calcifications.

Although craniopharyngiomas are benign tumors the World Health Organization grade, they usually show a high recurrence rate and can be clinically aggressive depending on the location and size of the tumor [4]. Craniopharyngiomas are usually located in the sellar/parasellar region. The sellar region includes the sella turcica and pituitary gland. The parasellar region includes the cavernous sinuses, suprasellar (chiasmatic) cistern, hypothalamus, and ventral inferior third ventricle along with vessels, nerves, and meninges. Compression of the optic chiasm can lead to visual disturbances, such as bitemporal hemianopsia, diplopia, and optic nerve atrophy. If the tumor grows inferiorly, it can compress the pituitary gland or hypothalamus, which can cause a variety of problems related to endocrine dysfunction, such as growth retardation (in children), hypogonadism (in adults), neurohormonal diabetes insipidus, menstrual disorders, and hypothalamic obesity [5]. The most common symptoms are headaches, nausea, and vomiting due to increased intracranial pressure.

The diagnosis of craniopharyngioma is based on clinical examination along with radiological findings and is then confirmed by histopathological findings. Computed tomography is very useful in identifying calcifications that are seen in 90% of the cases, but MRI is the gold standard for sellar region assessment because it best demonstrates the morphology of the tumor, its localization, extent, and association with surrounding structures such as the hypothalamus. MR angiography helps to evaluate its involvement with the vessels and to differentiate a tumor from a possible arteriovenous malformation [6].

The wide range of histological appearances of craniopharyngiomas were reflected in their MR appearances. Adamantinomatous usually has cystic components and calcifications in 90% of cases. The papillary types of tumors are mostly solid. Solid parts and the cyst capsule are hypointense relative to the brain and show enhancement following gadolinium administration on pre-contrast T1-weighted images. The cystic fluid has variable signal intensity, depending on protein and cholesterol concentration, and is usually hypointense or hyperintense on T2-weighted images [7]. High intensity on T1-weighted images was noted in cystic lesions with high cholesterol, protein content , or methemoglobin levels.

Atypical craniopharyngiomas have diverse MRI appearances, which can complicate their diagnosis and differentiate them from other brain tumors. Therefore, a comprehensive evaluation, including clinical presentation, imaging features, and histopathological examination, is often necessary to make an accurate diagnosis and guide appropriate treatment for these tumors. The management of craniopharyngiomas is challenging because of their location, invasiveness, and proximity to adjacent neurovascular structures (pituitary, hypothalamus, optic chiasm, circle of Willis, third ventricle). This typically requires a multidisciplinary approach and should be individualized for each patient.

Ethics

Informed Consent: Informed consent was obtained from the patient.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: A.K., A.A., N.A., Concept: A.K., A.A., N.A., Design: A.K., A.A., N.A., Data Collection or Processing: A.K., A.A., N.A., Analysis or Interpretation: A.K., A.A., N.A., Literature Search: A.K., A.A., N.A., Writing: A.K., A.A., N.A.

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