Clinical Report

Successful Medical Management of Multilocular Psoas Abscess in a Pregnant Woman with Crohn's Disease: A Case Report

Ai SUZAKI^{1,2)} and Masakazu TAKAZOE²⁾¹⁾*Department of Pathology and Microbiology, Nihon University School of Medicine*²⁾*Department of Internal Medicine, Social Insurance Central General Hospital*

The psoas abscess is very uncommon during pregnancy. If the abscess is secondary, surgical intervention on the predisposing disease is necessary for better outcome. We report the first case of a psoas abscess complicating Crohn's disease during ongoing pregnancy. A 28-year-old gravid woman with a history of ileal Crohn's disease presented at 16 weeks of gestation with high fever, right lower quadrant and low back pain. A diagnosis of right multilocular psoas abscess was made by MRI. Due to the impossibility of drainage and surgical intervention, she was treated by administration of appropriate antibiotics and total parenteral nutrition. The patient transvaginally delivered a female baby at the 40th gestational week without complications. Medical treatment of psoas abscess seems to be a choice in selected cases, although it requires a long hospital stay and continued careful observation due to further risk of infections such as catheter related blood stream infections.

Key words: crohn's disease, psoas abscess, pregnancy complications, pregnant woman, magnetic resonance imaging

クローン病, 腸腰筋膿瘍, 妊娠合併症, 妊婦, MRI

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Introduction

Psoas abscess is a rare and life threatening condition in obstetric. Two types of psoas abscess exist. The primary psoas abscess is generally following haematogenous dissemination of an infectious agent. In contrast, the secondary abscess is the result of local extension of an infectious process near the psoas muscle¹⁾.

In obstetric several psoas abscess are reported, and most cases are subsequent to normal deliveries²⁾, abortion³⁾, and caesarean sections⁴⁾. During ongoing pregnancy, only five cases of psoas abscess have been reported in indexed English literature till date. Three were primary abscess^{3,5)}, and two were secondary^{3,6)}. Both of secondary psoas abscess are caused by chronic infectious disease, one is tuberculosis³⁾ and another is xanthogranulomatous pyelonephritis⁶⁾. We present herein the case of secondary psoas abscess caused by acute infection in 28-year-old Japanese gravid woman with Crohn's disease.

Case Report

A 28-year-old Japanese nulliparous female at 16 weeks' gestation was referred to our hospital for high fever, right lower quadrant and low back pain. She had a past history of Crohn's disease. It first manifested at the age of 22 years as fever and vomiting, and a diag-

nosis of Crohn's disease was made by colonoscopy with biopsy of a noncaseating epithelioid granuloma. She had been taking 2250 mg mesalamine daily, and became almost free from symptoms and remained in good health for several years.

On admission she reported seven days of high fever and lower abdominal pain, and two days of low back pain. Physical examination revealed severe tenderness of the right lower abdomen. A pregnant uterus was also evident in the middle lower abdomen. Her pregnancy course was uneventful to date. She was 154 cm tall, weighed 43.5 kg, and her body temperature was 39.9°C. Laboratory examinations revealed a white blood cell count of 13700/mm³, hemoglobin of 9.7mg/dl, platelet count of 34.5 × 10⁴/mm³, serum albumin level of 3.3 g/dl, C-reactive protein level of 9.3 g/dl, and an erythrocyte sedimentation rate of 122 mm/h. Hepatic enzymes, amylase, urea nitrogen, coagulation and urinalysis were normal. The blood culture was negative. The International Organization for the Study of Inflammatory Bowel Disease (IOIBD) assessment score⁷⁾ was evaluated as 6. Abdominal ultrasonography showed a multilocular hypoechoic lesion on the right side behind the gravid uterus. A small artery was noticed between the abscess and gravid uterus. Magnetic resonance imaging (MRI) showed low intensity on the T1-weighted image (Fig. 1A) and high intensity

Fig. 1 MRI showing right psoas abscess.

A: Low intensity on T1-weighted image.

B: High intensity on T2-weighted image.

MRI showed a multilocular abscess with a diameter of 75 mm in right psoas muscle (arrows).

C: MRI showed psoas abscess near the gravid uterus.

Placenta (triangles) and parts of the fetus were recognized.

on the T2-weighted image (Fig. 1B) within the right psoas muscle, which suggested an abscess with a diameter of 75 mm, near the placenta (Fig. 1C). The psoas abscess was considered to have been caused by a fistulous lesion with Crohn's disease. All oral intake was withheld and a daily dose of ampicillin sulbactam 4.5 g and ceftazidime 3 g was given intravenously. Because of the large abscess, percutaneous drainage

Fig. 2 MRI showed no abscess in right psoas muscle after delivery.

Fig. 3 X-ray examination of the small intestine showed terminal ileum.

After delivery, longitudinal ulcers (curve) and cobblestone appearance with fissures (triangles) were recognized.

was considered first. However the abscess cavity was deemed to be inaccessible, interrupted by the ilium and by an artery with the gravid uterus, and drainage was inappropriate owing to the multilocular nature of her abscess. Surgical intervention including enterectomy was not accepted by surgeons. Eventually we chose medical therapy. She was given intravenous antibiotics for 27 days until the level of CRP became completely negative. Home parenteral nutrition of 1680 kcal was instituted from a tunneled cuffed Hickman line during pregnancy, and 2250 mg of mesalamine a

Fig. 4 Colonoscopic finding showed deformity of Bauhin valve with multiple nodulations. A colonoscope could not be inserted into the terminal ileum.

day was continued. The maternal nutritional state improved in the third trimester, and fetal development was normal.

At the 40 weeks of gestation, she had a spontaneous vaginal delivery of a 3022 g female infant with Apgar scores of 8 and 9, with no congenital anomaly. MRI after delivery showed no abscess in the right psoas muscle (Fig. 2). The patient had X-ray findings of longitudinal ulcers and cobblestone appearance with fissures in the terminal ileum (Fig. 3). Colonoscopy revealed multiple nodulations on the Bauhin valve with stenosis, and the colonoscope could not be inserted in the terminal ileum (Fig. 4). It was revealed that she had a secondary psoas abscess complicated with ileal Crohn's disease.

Discussion

The triad of psoas abscess includes persistent fever, low back or flank pain and abdominal mass⁸. Primary psoas abscess usually arises in young people under 30 years old, and the most frequently isolated pathogen is *Staphylococcus aureus*. On the other hand, secondary psoas abscess occur in older, and common initial sites are digestive tract, perinephric abscess, osteomyelitis, and postoperative complications¹. The mortality rate in primary psoas abscess is 2.4% and in secondary is 19%⁹. If untreated, it is estimated to be 100%¹. Early treatment involves the use of appropriate antibiotics with drainage or surgery is necessary before the sepsis becomes lethal. Drainage may be done through computed tomography guided percutaneous drainage. When access is difficult or fails, surgical drainage is necessary. In secondary psoas abscess, a surgical intervention on the predisposing disease must be necessary for better outcome. In patients with Crohn's disease,

performing a single operation to drain the abscess and to resect the diseased bowel site is desirable¹⁰.

In gravid women, however, there are a few cases of psoas abscess and no guidelines about the best treatment option for psoas abscess. For primary psoas abscess during pregnancy, surgical drainage and simultaneous Cesarean delivery of the infant are recommend as a cure⁵. Actually in a primary case report, the patient was admitted with right lumbar pain at 36 gestational weeks, and delivered a baby by Cesarean section and surgical drainage the following week. For a secondary psoas abscess with diffuse xanthogranulomatous pyelonephritis, Cesarean section at 32 weeks was followed by extended nephrectomy⁶. Whereas in our case she was at 16 gestational weeks, and her abscess cavity was deemed to be inaccessible and multilocular nature. We made a choice of medical therapy and total parenteral hyperalimentation. We selected appropriate antibiotics to cover *Staphylococcus aureus* and enteric bacteria¹¹.

The transmural nature of the inflammatory process causes deep fissuring ulceration and may result in complete perforation of the bowel wall in Crohn's disease. Over 10% of patients develop an abdominal or pelvic abscess during the course of their illness¹². For psoas abscess it is infrequent but one of the most serious complications of Crohn's disease and is required immediate diagnosis and treatment¹². Onset of Crohn's disease has increased recently and it has an incidence rate of 15 new cases and a prevalence rate of 183 per 1,000,000 people per year in Japan. As a peak age of onset is between 15 and 25 years, the effect of Crohn's disease on pregnancy is of great concern for woman at childbearing age. However, few cases of abscess have been reported in gravid women with Crohn's disease.

Activity of Crohn's disease during pregnancy increased the risk of spontaneous abortion, preterm delivery and low birth weight¹³. Fetal loss was significantly associated with disease activity at the time of conception¹⁴, whereas preterm delivery was significantly associated with reactivation of Crohn's disease during pregnancy. Mesalamine is a first-line drug for Crohn's disease, and the fetal safety was examined about this agent, which is in pregnancy category B. It is reported to increase the rate of preterm delivery, and to decrease the mean birth weight¹⁵. During breastfeeding the mesalamine dose might be reduced, because a case report stated that 5-aminosalicylic acid in breast milk induced infantile watery diarrhea¹⁶. During pregnancy, mesalamine, sulfasalazine or steroid therapy should not be withdrawn from a patient who needs to achieve or maintain a quiescent state of inflammatory bowel disease¹⁷, whereas methotrexate is contraindicated¹⁸. Recently infliximab, a chimeric

monoclonal antibody to tumor necrosis factor (TNF)- α , have been studies about using even during pregnancy¹⁹⁾. Further data will be necessary to exclude any fatal risk²⁰⁾. In our case, we used only mesalazine for Crohn's disease to avoid risk of abscess rupture, sepsis, and fetal or maternal death, because her psoas abscess had been active in infectious disease.

Conclusion

The psoas abscess is one of the most serious complications in gravid woman, and immediate diagnosis and treatment was required. Appropriate antibiotics, surgical drainage and simultaneous Cesarean delivery of the infant are recommend as a cure. Moreover a surgical intervention on the predisposing disease must be necessary for better outcome in secondary psoas abscess. The present case could be managed noninvasively without recurrence. With the increased incidence of Crohn's disease in Japan, secondary psoas abscess could be encountered. Multidirectional strategy for this disease should be established with all involved parties, including the obstetrician, physician, surgeon and radiologist.

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