

Case Report

Bacterial panperitonitis caused by *Neisseria gonorrhoeae*

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We here report a 16-year-old sexually active woman suffering from acute bacterial panperitonitis caused by *Neisseria gonorrhoeae*. She complained of severe abdominal pain and emergency drainage laparotomy was done under the diagnosis of acute bacterial panperitonitis. Drainage operation rapidly ameliorated her general condition and she was discharged from the hospital 17 days after the operation. After the operation *Neisseria gonorrhoeae* was detected by PCR from both purulent ascites in the abdominal cavity and cervical discharge, and thus the diagnosis of gonococcal panperitonitis was confirmed. Although the usual manifestations of gonococcal infection in women are slight, such as cervical discharge or mild miction pain, *Neisseria gonorrhoeae* should be added to the list of bacteria causing acute bacterial panperitonitis. This is the 6th reported case of gonococcal panperitonitis in 20 years in the Japanese literature.

I. Introduction

Neisseria gonorrhoeae is one of the agents which induce sexually transmitted diseases (STD). This organism usually causes slight uterine cervicitis and mild cystitis/urethritis in women (1). In some cases this bacterium invades the fallopian tubes and leads to salpingitis, causing occlusion of the tubes and thus tubal sterility. There are, however, few reports of panperitonitis caused by this organism.

Recent Japanese surveillance data indicated that the number of women suffering gonococcal infection in Japan has increased during the past ten years (2), reaching 50 per 100,000 (0.05%) among Japanese women (2). It is especially important that gonococcal infection has also been spreading widely among the adolescent women, which has attracted the wider attention not only of gynecologists but also of educational service staff. Here we report the case of a 16-year-old woman who suffered panperitonitis caused by *Neisseria gonorrhoeae*.

II. Case Report

A 16-year-old woman was admitted to Nikko Municipal Hospital (Tochigi, Japan) on October 16, 2004 with severe abdominal pain, high fever (39°C), and watery diarrhea. She was

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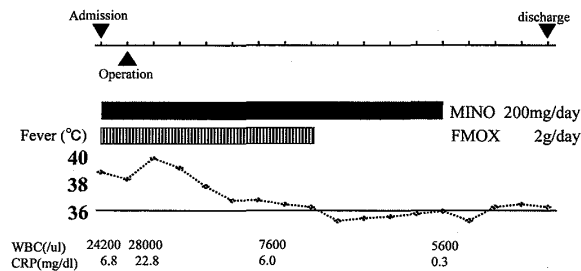


Figure 1. Clinical course and the laboratory data of the present case.

A black bar and a dotted bar indicates the period in which minocyclin and FMOX was prescribed, respectively.

Dotted line; body temperature

sexually active and had had more than four sexual partners. Two days previously she had suffered acute abdominal pain and fever (37.7°C) and had visited a general practitioner but the complaints were not relieved. On physical examination, there was rebound tenderness in the lower abdomen. Pelvic examination also revealed tenderness in the uterus and adnexae but there was no cervical discharge. Initial laboratory studies disclosed leukocytosis of $24,200/\mu\text{l}$ with 91% neutrophils and an elevated CRP level (6.8mg/dl), which together with the physical signs led us to make the most probable diagnosis of bacterial peritonitis. Antibiotic treatment (flomoxef 2g/day and minocycline 200mg/day) did not relieve the complaints and the data worsened (WBC $28,000/\mu\text{l}$ and CRP 22.8mg/dl), which obliged us to perform an emergent surgical laparotomy (Figure 1).

During the laparotomy, a small amount of purulent discharge was observed within the pelvic cavity. The small bowel was highly distended, compatible with paralytic bowel. The bilateral oviducts were swollen and there was purulent discharge around them, suggestive of salpingitis. There were no signs of appendicitis. The abdominal cavity was washed and a drainage catheter was placed. After surgery organism colonies were identified as *Neisseria gonorrhoeae* from the vaginal secretions. DNA for *Neisseria gonorrhoeae* was also identified both from the vaginal secretion and purulent discharge in the pelvic cavity, using PCR. Thus, the diagnosis of peritonitis due to *Neisseria gonorrhoeae* was confirmed.

Immediately after the laparotomy, the signs and symptoms of peritonitis disappeared, with an uncomplicated postoperative course. She was discharged from the hospital 17 days after the laparotomy. She refused to make her partners undergo STD examination. Her partners' STD history including gonorrhoeae was not identified.

III. Discussion

According to the Japanese literature, during the past 20 years there have been only five women who suffered from bacterial peritonitis caused by *Neisseria gonorrhoeae* (3, 4, 5, 6, 7) (Table 1). This is the 6th reported case. Among these six women, all complained of severe abdominal pain, with the lower abdomen being the most severe. Three women, including this case, exhibited watery diarrhea. On the day of admission or the next day, emergency lapar-

Table 1. Summary of the reported cases of women with gonococcal peritonitis.

Author	age	complaints	Salpingitis	Site of gonococcus detection	emergency laparotomy	partner
Ichinohe ³⁾	47	abdominal pain, diarrhea	+	ascites, vagina, rectum	+	gono. detected
Kitamura ⁴⁾	35	abdominal pain, diarrhea	+	urine	+	gono. detected
Kunimatsu ⁵⁾	23	abdominal pain	+	ascites	+	unknown
Akabane ⁶⁾	39	abdominal pain	+	ascites	+	unknown
Ojika ⁷⁾	48	abdominal pain	+	ascites	+	gono. detected
Baba	16	abdominal pain, diarrhea	+	ascites, vagina	+	unknown

otomies with drainage tube placement were done in all six patients. All recovered immediately after the operation. During surgery, all showed inflammatory signs of the tubes such as redness or swelling, and some showed purulent discharge from the tubal fimbria. All these clinical features were in good agreement with those of this case. *Neisseria gonorrhoeae* was obtained from ascites or pelvic purulent discharge in five out of six, and from the urine in the remaining one. After the operation, the detailed history revealed gonococcal infection/treatment on the partners' side in three out of six.

Recent surveillance data indicated that the number of women suffering gonococcal infection in Japan has increased in the past ten years, reaching 50 per 100,000 (0.05%) in 2002 among Japanese women (2). In ordinary cases of gonococcal infection, women suffer from only slight cervicitis or urethritis/cystitis. The main symptoms, therefore, are slight vaginal discharge, miction pain, and urinary frequency, etc. If the relatively high occurrence of gonococcal infection among Japanese women cited above is considered, the panperitonitis due to *Neisseria gonorrhoeae* observed here may be a very rare case. Although rare, not only gynecologists but also general practitioners should remember that *Neisseria gonorrhoeae* may sometimes induce acute panperitonitis. If the patient has no symptoms such as vaginal discharge or miction pain similar to this case, or if she does not mention these complaints even though she does have them, doctors may not think of gonococcal peritonitis as a differential diagnosis of panperitonitis. History taking, especially regarding sexual activity and the partners' STD history, may also be very important in suspecting and diagnosing gonococcal peritonitis.

Recent Japanese data also indicated the increasing number of gonococcal infection among relatively younger age groups (Figure2). The 20-24 age group had the highest prevalence and the 15-19 group was a close second (8) (Figure2). Since younger women have more sexual partners than older women (2), younger gonococcal patients may be more risky sources of *Neisseria gonorrhoeae* than older patients. Furthermore, since gonococcal infection induces tubal sterility and thus hinders a woman's future fertility, significant attention should be paid to gonococcal infection, especially in adolescent women, from the viewpoint of both the gyneco-medical field and general health care service.

Summing up, we here reported a sexually active adolescent woman who suffered acute panperitonitis caused by *Neisseria gonorrhoeae*. An emergent laparotomy was performed successfully. Although rare, *Neisseria gonorrhoeae* should be added to the list of causal agents of bacterial peritonitis, especially among adolescent women with high sexual activity.

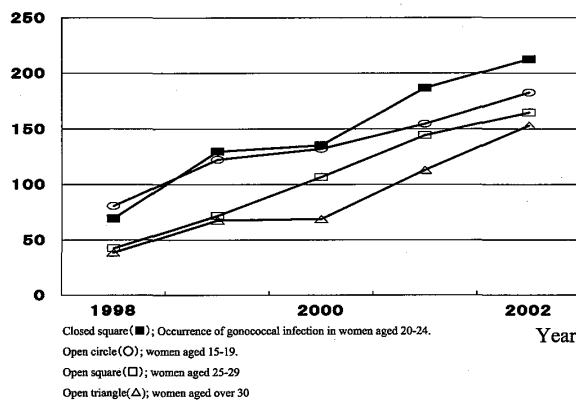


Figure 2. Yearly occurrence of gonococcal infection in Japanese women (cited from ref. 2).

The number indicates the occurrence of patients of the indicated age group among 100,000 women of the same age group.

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急性淋菌性汎発性腹膜炎の1例

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要 約

淋菌性汎発性腹膜炎のために開腹ドレナージ手術を行った思春期女性症例を経験した。症例は16歳女性で複数男性との性交経験がある。発熱と下腹部痛のため紹介入院となった。下腹部全体の筋性防御と子宮圧痛があり、白血球増多・CRP 高値を認めた。膿性頸管腔分泌物は認められなかった。flomoxef 2g/day と minocycline 200mg/day を併用投与したが腹膜刺激症状が悪化し、汎発性腹膜炎の診断で緊急開腹手術をおこなった。膿性腹水があり腸管の表面を膿性被膜が覆っており、卵管に強度の炎症性浮腫が認められた。腹腔内を洗浄しドレーンを留置した。術後3日目には下腹部痛が軽快し解熱した。細菌検査では、腔分泌物の淋菌培養が陽

性で、子宮頸管分泌物・膿性腹水からはPCRで淋菌が検出された。以上より、本症例は淋菌による汎発性腹膜炎と診断された。医学中央雑誌での検索によると、最近20年間に淋菌性汎発性腹膜炎は本邦では5例報告され、いずれも緊急開腹ドレナージ手術が行われた。女性の淋菌感染症は多くの場合子宮頸管炎・下部尿路感染症を示すが汎発性腹膜炎となる場合もある。近年、初交年齢の低下と共にティーンエイジャーのSTDが増加し、若年女性の淋菌感染症も増加傾向にある。腹膜炎の診療に際して、ことに性的活発な女性の腹膜炎では、淋菌性腹膜炎も鑑別診断として考慮する必要がある。

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