Uterine perforation and migration of an intrauterine contraceptive device in a 24-year-old patient seeking care for abdominal pain

Michelle Barber MSW, DC^{a,*}, Daryl S. Chalifour DC^b, Maria R. Anderson DC^a

^a Assistant Professor/Faculty Clinician, Palmer College of Chiropractic, Davenport, IA 52803

^b Chiropractor, Private Practice, Bilan Chiropractic, Anchorage, AK 99503

Received 6 October 2010; received in revised form 10 November 2010; accepted 24 November 2010

Key indexing terms:

Chiropractic;
Abdominal pain;
Intrauterine
contraceptive device;
Uterine perforation;
Aorta, abdominal

Abstract

Objective: The purpose of this case report is to describe the case of a 24-year-old woman complaining of diffuse abdominal pain following insertion of an intrauterine contraceptive device (IUC).

Methods: A 24-year-old woman, 8 weeks postpartum, sought chiropractic care for intermittent stabbing pain in her left upper quadrant that had been present for a week. She returned 1 week later with no resolution of her complaint. She then recalled that, at her 6-week gynecological examination, she had undergone insertion of an IUC and that the abdominal pain had begun a week later. She was advised to return to her gynecologist. Subsequent evaluation by the gynecologist revealed that the IUC had perforated her uterus and had migrated to the upper left quadrant of her abdomen, where it was found anterior to the L1-2 vertebral bodies, lying in contact with the anterior surface of the abdominal aorta. To our knowledge, this is the only report of this type of presentation in a chiropractic office.

Results: The initial intervention with this patient included chiropractic adjustment and myofascial release. At her subsequent visit, with no resolution of her complaint, she was referred back to her gynecologist for additional evaluation. Because the IUC had perforated her uterus, she underwent emergency laparoscopic surgery. The surgery was successful, and she recovered fully.

Conclusion: Chiropractic physicians should consider uterine perforation by IUC in the differential diagnosis of a female patient of childbearing age seeking care for abdominal pain.

© 2011 National University of Health Sciences.

* Corresponding author. Palmer College of Chiropractic, 1000 Brady Street, Davenport, IA 52803. Tel.: +1 563 884 5106; fax: +1 563 884 5731.

E-mail address: michelle.barber@palmer.edu (M. Barber).

Introduction

The intrauterine contraceptive device (IUC) is a modern method of contraception used by 1.8% of the US population.¹ Although it is considered relatively safe, there are potential complications. In 5% to 10% of cases, the IUC is expelled within 5 years; and expulsion recurs in about 30% of these women.² In less than 1.5% of cases overall, problems such as difficult insertion, pain, bleeding, and syncope are reported.² Uterine perforation during insertion is rare, occurring in .05 to 13 per 1000 insertions³; but the risk of perforation is higher when the IUC is inserted less than 4 to 6 weeks after delivery or elective abortion.²

This article discusses a 24-year-old woman who sought care for a complaint of left upper quadrant abdominal pain. After evaluation, she was diagnosed with the rather rare diagnosis of a perforated uterus and subsequent migration of her IUC to the upper left quadrant, where it was found lying in contact with the anterior surface of the abdominal aorta, adjacent and anterior to the L1-2 vertebral bodies. Although uterine perforation is a rare complication of IUC insertion, this case is even more unusual in that the IUC migration was not to the neighboring viscera, but instead to a far-removed location of the abdomen. Furthermore, to our knowledge, this particular type of case has never been reported in the chiropractic literature as a presentation in a chiropractic office. The patient gave consent to have her health information published in this study.

Case report

A 24-year-old woman sought care for complaints of intermittent stabbing pain in her left upper quadrant. She had been seen in the clinic previously for headaches, upper thoracic stiffness, and a left knee patellar tracking disorder. The patient had also given birth to her first child 8 weeks before this visit. She reported having severe hyperemesis throughout the entire pregnancy that required daily anti-nausea medication. She had a normal vaginal birth, undergoing 18 hours of labor with no pain medication and delivering an 8-lb, 11-oz baby who was 2 weeks premature. At her 6-week follow-up gynecological examination, all was well. Her sutures had healed completely, and she was told she could resume normal physical activity level and regular exercise.

At 8 weeks postpartum, she presented to the chiropractic office with complaints of upper thoracic

stiffness and a headache that had been present since the day before, as well as an intermittent stabbing pain in her left upper quadrant. She reported that her side had a sharp and localized pain that had been present for 1 week and was not related to any accident or injury but caused constant discomfort and interrupted her sleep. She rated the pain as a 2/10 on a 0 to 10 scale. Vital signs were normal, and abdominal examination revealed diffuse tenderness in her left upper quadrant on light palpation. All other examination findings were unremarkable. Chiropractic examination showed occiput and T8 subluxations as well as left psoas myospasm. Because she did not appear to have any type of acute abdomen, the differential diagnoses at this time were primarily gastritis and/or referred pain from the myospasms. She was treated with chiropractic adjustments and sacrooccipital technique psoas release. The patient felt better after the psoas work and was advised to continue to monitor the abdominal pain.

She returned to the clinic 1 week later, with the unresolved complaint of an intermittent stabbing pain in her left upper quadrant. This was again rated 2/10 on a 0 to 10 scale. The symptoms were not related to any accident, injury, food intolerances, or activity other than lying on her left side and had not changed since her last appointment. She had an additional complaint of upper thoracic stiffness that had been present for 5 days and that she associated with holding/nursing her newborn. Additional history gathering was done to try to further assess the complaint. In reviewing the timeline of the complaint with the patient, she did recall that, at her 6-week gynecological examination, she had undergone insertion of an IUC and that the abdominal pain had begun about a week later. Vital signs were normal, and there was now point tenderness in her left upper quadrant on light palpation. Chiropractic examination showed T1, T8, and right ilium subluxations. She was treated with chiropractic adjustment. In addition, given the timeline of the onset of her complaint, she was told that she should see her gynecologist because her pain could be related to IUC insertion complications, such as an infection or pelvic inflammation that might be referring to the upper quadrant. In this case, even though the abdominal pain was experienced more in the upper quadrant, it seemed possible that there could be a connection to the IUC insertion because the pain had persisted for 2 weeks, her examination findings did not support an acute abdomen, and the relationship of the onset was so closely related to that event.

Fig 1. Ultrasound of the uterus showing that the intrauterine device is not seen.

The following day, the patient was evaluated by her gynecologist. She still had point tenderness in her left upper quadrant on palpation. She underwent a gynecological examination, and her gynecologist was unable to visualize IUC strings during speculum examination. An ultrasound was ordered and showed a normal uterus and ovaries with no abnormal abdominal masses, but the IUC was not seen in the uterus (**Fig 1**). The following day, the patient

Fig 3. Anteroposterior abdomen radiograph showing intrauterine device adjacent to the L1-2 vertebral bodies.

Fig 2. Lateral abdomen radiograph showing the intrauterine device anterior to the L1-2 vertebral bodies (arrow).

underwent diagnostic radiography (anteroposterior pelvic, anteroposterior abdomen, and lateral abdomen). The radiology report indicated that the IUC was present in the left upper quadrant, likely in the retroperitoneum. The IUC could be seen adjacent and anterior to the L1-2 vertebral bodies (**Figs 2 and 3**).

The next day, she underwent laparoscopic removal of the IUC from her retroperitoneal cavity. The IUC was found to be lying in contact with the anterior surface of the abdominal aorta. No additional scarring, adhesions, or perforations were noted on any abdominal organs during the examination other than on her uterus. The final diagnosis for the abdominal pain was perforation or hemorrhage (accidental) during surgical or medical care.⁴ She recovered well postsurgically and is now in good health with no abdominal pain.

Discussion

The IUC is a widely used birth control method, accounting for 16.5% use in undeveloped countries and 9.4% in developed countries.¹ It is generally considered a safe contraceptive method, but there are rare complications. The major complications associated

with IUCs are perforation, infection, and ectopic pregnancy.⁵ Intrauterine contraceptive device perforations/migrations primarily occur during insertion and within the first 6 months postpartum. The most commonly affected tissues are the uterine axis and/or fundus.⁶ Typically, if IUC migration is suspected as a differential, it most commonly migrates to the surrounding gynecological tissues⁷; and the abdominal pain is in the lower quadrant due to S2-S4 parasympathetic and T10-L1 sympathetic fiber innervations to the uterine fundus.³ Other less serious complications can include perforation of the uterus, vagal reaction, vaginal bleeding, lower abdominal pain, ovarian cyst, dysmenorrhea, expulsion of the IUC, ectopic pregnancy, and pelvic infection.⁸ Recent studies suggest that uterine perforation by an IUC occurs in .87 per 1000 cases, but the incidence can range from .05 to 13 per 1000 insertions.³ Patients with an extremely retroverted or retroflexed uterus are at higher risk of uterine perforation. Furthermore, patients who have just delivered vaginally (within the first 6-8 weeks postpartum) have a greater tendency to expel their IUCs spontaneously because of an incompletely involuted uterus and an unhealed cervix.⁸ In the cases of IUC migration that are reported in the literature, gynecologic tissues are the most often affected targets. These tissues include the cervix, broad ligament, ovary, and uterine myoma. The urinary system and rectosigmoid colon were found to be the next most commonly involved.⁸ There has also been a report of migrating IUC leading to appendicitis.⁹ However, it is extremely rare to see migration of an IUC device to a location far removed from the lower abdomen, such as in this case of migration to the upper left quadrant.⁸

Conclusion

To our knowledge, there are no reported cases in the chiropractic literature of a patient seeking care for abdominal pain resulting from a perforated uterus with

IUC migration. Here, we were fortunate that the problem was diagnosed before there was any damage to the abdominal aorta. Uterine perforation and IUC migration should be considered a possible differential diagnosis in cases of abdominal pain in women of childbearing age seeking chiropractic care.

Funding sources and potential conflicts of interest

No funding sources or conflicts of interest were reported for this study.

References

1. United Nations. World contraceptive use 2007. New York, NY: United Nations, Population Division, Dept. of Economic and Social Affairs; 2008.
2. Intrauterine devices: an effective alternative to oral hormonal contraception. *Prescrire Int* 2009;18(101):125-30.
3. Grimaldi L, De Giorgio F, Andreotta P, D'Alessio MC, Piscicelli C, Pascali VL. Medicolegal aspects of an unusual uterine perforation with multiload-Cu 375R. *Am J Forensic Med Pathol* 2005;26:365-6.
4. American Medical Association. ICD-9-CD 2009. International classification of diseases, 9th revision, clinical modification. Physician volumes 1 and 2. Chicago: American Medical Association; 2008.
5. Ozdemir H, Mahmutyazicioğlu K, Tanriverdi HA, Gündoğdu S, Savranlar A, Ozer T. Migration of an intrauterine contraceptive device to the ovary. *J Clin Ultrasound* 2004;32(2):91-4.
6. Caliskan E, Ozturk N, Dilbaz BO, Dilbaz S. Analysis of risk factors associated with uterine perforation by intrauterine devices. *Eur J Contracept Reprod Health Care* 2003;8(3):150-5.
7. Appenzeller O. Autonomic nervous system: an introduction to basic and clinical concepts. 4th ed. New York: Elsevier; 1990.
8. Sun CC, Chang CC, Yu MH. Far-migrated intra-abdominal intrauterine device with abdominal pain. *Taiwan J Obstet Gynecol* 2008;47(2):244-6.
9. Chin HM, Chen TW, Hsieh CB, Cehn CJ, Yu JC, Liu YC, et al. Intrauterine contraceptive device appendicitis: a case report. *World J Gastroenterol* 2005;11(34):5414-5.