ASYMPTOMATIC PERFORATION OF THE UTERUS WITH THE COPPER-7 IUD AND ITS MANAGEMENT

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SYNOPSIS

Embedding in, penetration, or perforation of the uterus by a portion or all of an intra-uterine device are potential complications of all types of IUDs. The Copper-7 device is no exception to this general observation. We present here two cases of silent translocation of the Copper-7 device and discuss its aetiology and management.

INTRODUCTION

For the last decade, intra-uterine devices have been used with renewed interest in clinical practice and in family planning programmes throughout the world. Whilst these devices have proven to be relatively effective as contraceptive agents, major complications have been reported, such as severe pelvic infection and perforation of the uterus (Wilson *et al*, 1972; Roberts *et al*, 1972; Povery *et al*, 1967). The Copper-7 intra-uterine device, a relatively new device of plastic with copper wire twined around the stem, is not free from such severe complications. The purpose of this communication is to present two case reports of silent perforation of the uterus with the Copper-7 device and to discuss the management.

CASE REPORTS

Case 1

A 27 year old Chinese female, para four, with a youngest child aged two, had a Copper-7 IUD inserted on 20th January, 1973 at the University Hospital, Kuala Lumpur. Insertion was easy with no symptoms immediately following insertion. On 7th May, 1973, at a routine follow-up clinic, vaginal examination showed that the thread of the device was not visible. Her periods had been regular. A plain X-ray of the abdomen showed the device to be still in the pelvis and probably within the uterus. At examination under anaesthesia on 9th May, 1973, no device was found at dilatation and curettage. A diagnosis of translocation of the IUD was made and this was confirmed by hysterosalpingogram (Fig. 1). The patient was symptom-free throughout. Subsequently, a laparoscopic examination was done. The device was found to be wrapped round by the greater omentum with only the thread visible. The uterus was visible with no sign suggestive of perforation. As it was difficult to free the device from the omentum with biopsy forceps introduced through a separate incision, the umbilical incision was widened, the omentum containing

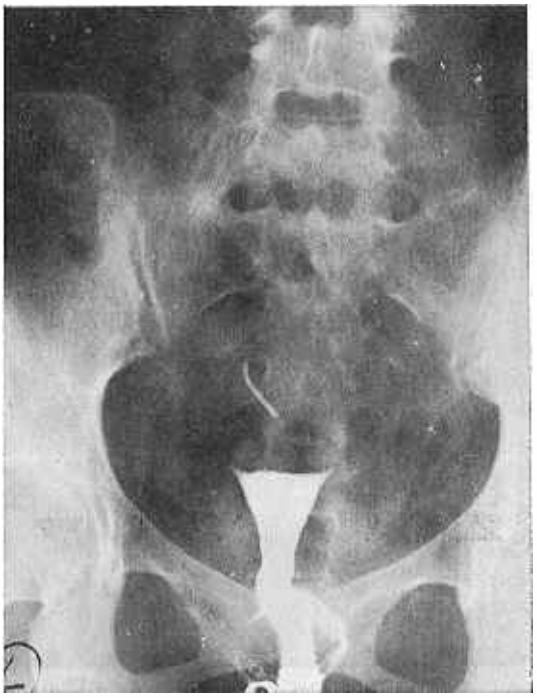

Fig. 1. Hysterosalpingogram of case 1 showing extra-uterine position of the Copper-7 device.

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the device was delivered through the incision and the device removed under direct vision. Histopathology of the omentum surrounding the IUD showed foci of non-specific chronic inflammation. The patient was discharged well seven days later.

Case 2

A 28 year old Malay female, para three, with a two month old youngest child, had a Copper-7 device inserted in May 1973 in a rural Family Planning Clinic in Kuantan about 200 miles from Kuala Lumpur. Insertion was said to be easy, with only slight abdominal cramps experienced by the patient soon after the insertion. She had been symptom-free since then. At a routine follow-up examination six months later, the thread of the device was not visible. A plain X-ray of the abdomen showed the device to be high up in the left lumbar region (Figs. 2 & 3). She was subsequently referred to the University Hospital, Kuala Lumpur, for removal. At laparoscopy, the device was seen after great difficulty lateral to the descending colon about 10 cm. from the splenic flexure. Biopsy forceps was introduced through a separate trocar in the left iliac fossa, the loop was identified, mobilised and grasped with the biopsy forceps and brought up to the trocar. Both trocar and biopsy forceps were then removed together and the loop was delivered out of the abdomen. A minimal ooze in the area where the device was situated was noticed. She was discharged well the following day.

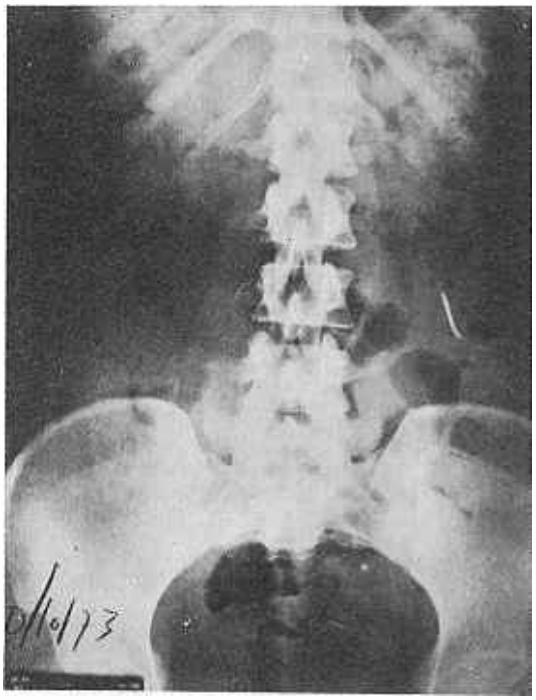

Fig. 2. Plain X-ray film of case 2 showing translocated position of Copper-7 IUD high up in left lumbar region.

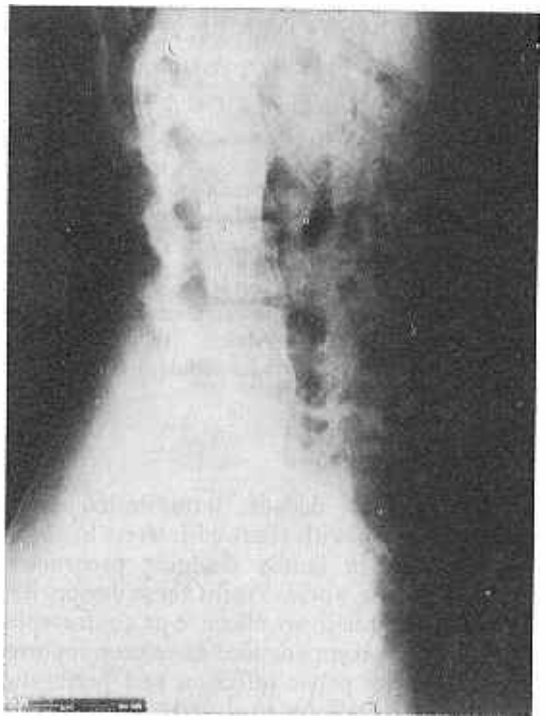

Fig. 3. Lateral X-ray film of case 2 showing the high extra-uterine position of the device, close to posterior abdominal wall.

DISCUSSION

Perforation of the uterus is the most worrying complication associated with the use of intrauterine devices. The frequency of this complication appears to be related to the type of device used and experience of the operator. Under condition of mass use, Tietze (1967) reported nine perforations of the loop in 13,362 insertions. The bow type of IUD had a much higher perforation rate of 1·3 per cent.

The aetiology of uterine perforation with intrauterine devices is not clear. There appears to be a close relationship between the time of insertion and the risk of perforation. A ten-fold reduction in the risk of perforation can be accomplished by timing insertions 10 to 12 weeks after deliveries (Davis, 1971). In a comprehensive report on the Singapore experience with the Lippes loop, Ratnam and Tow (1970) found that 86 of the 93 loop perforations observed

occurred in patients fitted with the device less than eight weeks after deliveries. They concluded that in some instances the migration of the loop through the uterine wall could be attributed to the influence of vigorous uterine contractions churning the device into a bizzare shape and possibly hooking the rather sharp leading tip of the loop into the myometrium. Once the tip of the loop has engaged the myometrium, they postulated that further vigorous uterine contractions could force the loop progressively through the uterine wall. Although a well-established relationship between the timing and technique of insertion and the incidence of this complication does exist, the evidence of Ratnam and Tow of 'spontaneous translocation'could account for a significant proportion of uterine perforations. We feel that in the two cases described above this was the most likely mechanism involved.

The possible effects of perforation are dual. The first effect one could expect is pregnancy. This did not occur in our patients. The second effect of perforation is tissue reaction to the presence of a foreign body in the peritoneal cavity as was seen in the first case where omental encapsulation of the device occurred and a non-specific chronic inflammatory change was noticed. But this reaction does not necessarily occur in all cases as exemplified by the second case above where the device had been swept up to the lateral border of the descending colon with minimal reaction.

The clinical management of translocation has not been established. It is clear that with the closed device, in view of the risk of intestinal obstruction, the translocated device should be removed. On the basis of their experience with both closed and open types of devices, Schwartz and Markowitz (1970) recommended that the recognition of extra-uterine position is sufficient reason for elective removal even in the absence of symptoms. Similar views have been expressed by others (Esposito, 1966; Tatum, 1973). We fully support the views expressed by these authors. In our experience the removal of the translocated devices by laparoscopy is a valuable alternative to removal by laparotomy because of the advantages of minimal post-operative morbidity and a short hospital stay.

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