Despite the fact that revised attitudes and laws concerning abortion have led to a concomitant increase in medically performed abortions and a decrease in non-medical procedures, the serious problems of the patient with an infected abortion persist [1]. The frequency of non-medical abortion and its sequelae vary geographically throughout the world, in a fashion which is generally inversely related to the sanction of medical abortion. The high rank of septic abortion in the maternal mortality and morbidity statistics in the United States has been greatly reduced in the past two decades [2]. Nonetheless, because of the persistence of non-medical abortion in some areas as well as the result of complications of medical abortions, the practitioner must still deal with the clinical entity.

PATHOPHYSIOLOGY

In most instances non-medical abortion attempts are initiated by the introduction through the cervix of a foreign body such as a urethral catheter. The result is a degree of separation of the products of conception from the implantation site along with the introduction of bacteria from the normal cervical and vaginal flora. If the uterus is not emptied promptly and completely the combination of blood and necrotic products of conception provide an ideal culture medium for the growth of both the aerobic and anaerobic microflora. The process is initially confined to the products and the superficial decidua but untreated may spread to the deeper layers of the myometrium and also probably by lymphatic spread to the adnexae resulting in abscesses which may at times be microscopic in size. Septic thrombophlebitis in the contiguous pelvic veins is often seen in advanced cases presumably because of the proximity of anaerobic infections with heparinase producing organisms (B. fragilis). Bacteremia may occur and with the predominant gram negatives (E. coli), endotoxin may lead to shock, disseminated intravascular clotting, shock lung and death. Renal failure is also a common end-stage problem in the form of acute tubular necrosis or in some cases bilateral cortical necrosis. Renal failure is especially a problem with clostridial sepsis which is accompanied by hemolysis.
There is a number of variations in this clinical sequence which may result from the nature of the abortion attempt or immediate complications thereof. Uterine perforation at the time of the attempt may lead to intraperitoneal bleeding and hypovolemia. However, more often there is no continuing bleeding at the perforation site and the impact is simply to seed the myometrium and the peritoneum with blood and bacteria. In some cases caustic and/or toxic substances are instilled through the catheter. These may produce chemical burns and even absorption which is prone to occur because of the vascularity. The latter may lead to systemic toxicity. Soap and detergent solutions have been employed commonly and besides producing extensive necrosis, cause hemolysis on gaining access to the intravascular space. Potassium permanganate tablets may be placed in the vagina instead of the cervical canal causing severe burns.

Intrauterine devices are associated with a unique syndrome of septic abortion in that the process begins with migration of organisms along the tail of the device into the extraovular space, producing chorioamnionitis [3]. This infection then leads to spontaneous abortion in contrast to the usual process in which the abortion is initiated and becomes secondarily infected. Also peculiar to this process in which a patient becomes pregnant with an I.U.D. in place, is the initial clinical presentation which often does not focus attention on the pregnancy. Endotoxin shock or shock lung may actually precede gross signs of uterine infection or abortion [4]. Because of the insidious nature of the problems it is generally advised that patients who conceive with IUD's in place have them removed as soon as possible if the pregnancy is desired. If the string is not available for removal, termination should probably be urged since the potential for serious infection is significant and the ability to monitor for its onset limited.

MICROBIOLOGY

In most cases the bacteria involved in septic abortions are representatives of the normal cervical and vaginal flora acting opportunistically in the presence of altered host defenses [5, 6, 7]. Microbiologically, then, there is no difference between this and other polymicrobial soft tissue pelvic infections. Patients in the reproductive age groups commonly have several facultative as well as anaerobic species present in the genital tract. Among the facultatives, *E. coli* predominates and classically is the dominant organism in the early stages of the process and often the source of endotoxin shock. Anaerobes which are also inoculated at the start of the process tend to flourish as the facultative organisms consume oxygen and the oxidation reduction potential diminishes. Anaerobes dominate late in the process with abscess formation and although