Rupture of Mycotic Aneurysm during Pregnancy: Another hazard of drug abuse

Jayanta Kumar Dirghangi
Mohammed R. Ansari

Follow this and additional works at: https://scholarlycommons.henryford.com/hfhmedjournal

Part of the Life Sciences Commons, Medical Specialties Commons, and the Public Health Commons

Recommended Citation

This Article is brought to you for free and open access by Henry Ford Health System Scholarly Commons. It has been accepted for inclusion in Henry Ford Hospital Medical Journal by an authorized editor of Henry Ford Health System Scholarly Commons.
Rupture of Mycotic Aneurysm during Pregnancy
Another hazard of drug abuse

Jayanta Kumar Dirghangi, MD* and Mohammed R. Ansari, MD**

Widespread parenteral drug abuse has led to an increase in mycotic aneurysms in the area of drug injection. We report an unusual case of ruptured mycotic aneurysm of the right external iliac artery in a pregnant woman who was a heroin addict. In the third trimester, she developed a large hematoma that resulted in intra-uterine fetal death, premature labor, and hypovolemic shock. This case presented a difficult diagnostic and therapeutic dilemma that was confused with the syndrome of ruptured utero-ovarian veins.

A massive pelvic hematoma in a pregnant woman who does not have a pelvic injury would generally lead to the diagnosis of spontaneous rupture of the utero-ovarian veins (1). Diagnosis in these cases is often difficult not only because the complications of this venous system are unfamiliar, but also because any history of trauma is usually absent. Early diagnosis and aggressive treatment of this syndrome are essential to save the life of the pregnant woman and her fetus (1).

Here, we report the case of a pregnant woman who was a heroin addict. Early in the third trimester of her pregnancy, she developed a huge hematoma in the right side of the retroperitoneal area caused by the rupture of a right external iliac mycotic aneurysm. It resulted in intra-uterine fetal death, premature labor, and hypovolemic shock. This case presented a difficult clinical picture that was confused with the syndrome of ruptured utero-ovarian veins.

Case Report
A black woman, aged 25 years, gravida III, para I, AB I, had one previous vaginal delivery that was normal and spontaneous. During her second pregnancy, she was injecting her right groin with heroin at least twice a week. At the time of her second prenatal visit (estimated gestation period of 27 weeks), she complained of right groin pain and was admitted to another hospital with a diagnosis of phlebitis of the right pelvic veins and possible septic arthritis of the right knee. Blood cultures were positive for staphylococcus aureus, and she was treated with intravenous antibiotics and heparin. Intravenous heparin was continued. While she was still hospitalized, pain and fullness in the right flank increased. An ultrasonogram showed a mass that was probably inflammatory. The patient reported that she felt fetal movement throughout that day, but on the following day all movements ceased and contractions of labor began. The mass in the right flank increased, and the diagnosis of uterine rupture was considered most likely. She was transferred to Henry Ford Hospital at that time, and shortly after she arrived, she delivered a stillborn fetus. There was no postpartum hemorrhage, and the uterus seemed to contract well. Soon after delivery, her blood pressure fell precipitously, and her hemoglobin was 6.6 gms/dl.

On physical examination there was a firm, exquisitely tender abdominal mass which occupied the right flank from the groin to the costal arch. The right groin was indurated, and no pulse was palpable in the right femoral artery. The popliteal and pedal pulses on that side were present but diminished. There was hyposthesia on the right in L2, L3, L4, S2, S3, and S4 dermatomes.

A surgical consultation suggested that a ruptured hepatic adenoma was a likely cause for the symptoms and signs. A liver scan was obtained, and it was normal. Ultrasonogram (Fig. 1) revealed a large mass on the right side of the

Submitted for publication: December 14, 1981
Accepted for publication: May 7, 1982
* Department of Obstetrics and Gynecology, Cook County Hospital, Chicago, Illinois
** Department of Surgery, Henry Ford Hospital
Address reprint requests to Dr. Ansari, Department of Surgery, Henry Ford Hospital, 2799 W Grand Blvd, Detroit, MI 48202
abdomen consistent with hematoma. Ascites and bilateral pleural effusions were noted at this time, and there was moderate hydronephrosis of the right renal collecting system. An intravenous pyelogram (Fig 2) indicated a slightly dilated ureter with medial displacement.

However, because the patient's vital signs were deteriorating, no further diagnostic studies were performed, and she was immediately operated upon. A huge retroperitoneal hematoma was found (Fig. 3) extending from the dome of the right diaphragm into the right side of the pelvis and the broad ligament. The uterus and adnexae on the left were normal. Control of the abdominal aorta below the diaphragm and of the femoral artery in the groin was obtained in order to gain proximal and distal control before the hematoma was examined. The hematoma was incised and found to originate from a ruptured mycotic aneurysm of the right external iliac artery. The right femoral artery was thrombosed, and the tissue planes were edematous. The wall of the aneurysm was resected (Fig. 4) and the external iliac artery was ligated above and below the aneurysm. The right retroperitoneal area and the region of the aneurysm were widely drained, and the abdomen was closed. The patient received 24 units of whole blood and 8 units of fresh frozen plasma before and during surgery.

Her recovery from this procedure was uneventful, and her right lower extremity remained viable.

Discussion

The term "mycotic aneurysm" was coined by Sir William Osler in 1885 in his Gulstonian lectures on malignant endocarditis (2). He used it to describe multiple, bead-like aneurysms resembling a fungal growth in patients with bacterial endocarditis. He thought that the pathogenesis occurred by embolization of bacterial organisms from the endocarditis through the vasa vasorum, followed by destruction of the vessel wall and formation of an aneurysm. Bacteria were demonstrated in the aneurysm wall by Langton and Bowlby (3). In 1937 Crane (4) suggested that mycotic aneurysm could result from bacterial endocarditis or by direct extension to a blood vessel from an adjacent septic focus. Patel (5) pointed out that a mycotic aneurysm which occurred in a previously normal artery behaved differently from one in an atherosclerotic aneurysm or in a prosthetic graft.

Although the introduction of antibiotics reduced the prevalence of mycotic aneurysms, the recent increase in parenteral drug abuse has resulted in frequent recogni-
Ruptured Mycotic Aneurysm

Yellin (6) suggested that some cases are caused by direct arterial trauma, some result from embolism from a distant focus, and some follow contiguous infection. The triad of arterial insufficiency, femoral neuropathy, and bacteremia which characterize mycotic aneurysm (7,8) was present in our patient. Fever, pain, and leukocytosis occur in most patients with mycotic aneurysm, and the rupture of the aneurysm is usually preceded by increasing severity of the pain and tenderness. Thrombophlebitis or other inflammatory processes may be incorrectly diagnosed. In this patient, the error led to her treatment with heparin. Therefore, the diagnosis of mycotic aneurysm is often delayed, and eventual rupture is probably inevitable when such aneurysms are untreated. Other complications of the rupture of an iliac artery aneurysm have been reported, such as rectal hemorrhage (9,10), ureteral obstruction, intra-uterine rupture (11,12), and bladder neck obstruction (13). Muscular weakness in the femoral and sciatic nerve distribution (14,8) may also occur.

During pregnancy, it is likely that the remarkable increase in volume flow in the pelvis, the total blood volume, and the venous pressure in the pelvic veins may contribute to the timing of mycotic aneurysm rupture (15,16). Broad ligament hematoma, a ruptured uterus, and ruptured ovarian veins may mimic this syndrome (1).

Ruptured mycotic aneurysm is treated with ligation above and with excision below the infected, necrotic arterial wall. Controversy surrounds the advisability of restoring vascular continuity to the area of distribution.
of the ligated vessel (6). Bypass grafting to replace the usual vascular conduit requires uninfected tissue planes through which to place the graft. Because most drug addicts do not have patent superficial veins, such grafts must be prosthetic, and this increases the likelihood of subsequent infection. In this patient pulses were present distal to the occluded femoral artery, which indicated pulsatile flow through collateral circulation. One could, therefore, be quite certain that arterial ligation would provide an adequate blood volume flow to keep the limb viable. If subsequent symptoms of claudication occurred, a grafting procedure would have been possible and safer after the infection had been controlled.

Practitioners in urban areas where parenteral drug abuse is an increasing problem should consider rupture of a mycotic aneurysm as part of the differential diagnosis in a pregnant woman with an expanding hematoma in the retroperitoneal and pelvic areas. Because groin vessels are easily accessible for self-injection, the iliac vessels will be subject to mycotic aneurysms.

Acknowledgments
The authors gratefully acknowledge the suggestions of Dr. C. Paul Hodgkinson, Emeritus Consultant, Department of Obstetrics and Gynecology, and Dr. Bruce H. Drukker, Chairman, Department of Obstetrics and Gynecology, both of Henry Ford Hospital.

References