Isolated Aneurysms of the Iliac Arteries*

J. A. BARNEY, M.D.
G. R. WILLIAMS, M.D.**

In recent years aneurysms of the abdominal aorta have received a great deal of attention in medical literature. Less commonly than the aorta, the iliac arteries are the site of arteriosclerotic aneurysms and these lesions are of interest because they usually cannot be felt on abdominal examination; in fact, rupture of the aneurysm is frequently the presenting clinical picture. Continued increase in the number of problems associated with arteriosclerosis encountered in medical practice and the availability of reliable methods of treatment make it pertinent to report three cases of arteriosclerotic aneurysm of the iliac arteries recently encountered at the University of Oklahoma Medical Center.

CASE REPORTS

Case 1: (W.T. 27-38-37) A 72-year-old white male was admitted to the University Hospital on 1 August 1958 complaining of generalized skin rash of seven months' duration, a perineal abscess which had been draining for two weeks and swelling of the scrotum for one week. Examination at the time of admission revealed an elderly white male who appeared chronically ill with a pulse rate of 96 and blood pressure of 130/70 mm. Hg. The skin was dry and atrophic and there was a generalized maculopapular rash. No abdominal mass or tenderness was found. The scrotum was red and edematous but only slightly tender. In the perineum there was a draining sinus tract with surrounding induration and fluctuance extending towards the scrotum. No communication with the rectum was present and no rectal tenderness or masses were detected. Peripheral pulses were strong and equal. Admission laboratory data included a hemoglobin of 9.6 gm. per cent, hematocrit of 29 per cent, and WBC of 11,150. The urine had a specific gravity of 1.012, 2+ protein, 8-10 WBC/HPF and innumerable RBC/HPF.

The skin rash was considered to be a sensitivity reaction to penicillin which the patient had received shortly before the onset of the skin eruption. The draining sinus in the perineum was noted to extend into the scrotum and was felt to originate from a urinary infection. Incision and drainage of the perineal abscess was followed by staphylococcus septicemia which responded to antibiotic therapy.

Four weeks after admission the patient developed recurrent episodes of left lower quadrant abdominal pain, mildly cramping in nature. Examination at that time revealed moderate tenderness and muscle guarding localized to the left lower quadrant with mild abdominal distention and no palpable mass. A barium enema revealed no abnormalities. The left lower abdominal pain persisted off and on for the next week without explanation. Forty-one days after admission to the hospital and eight days after the onset of abdominal pain, the patient suddenly expired. Autopsy revealed a 9 x 9 cm. arteriosclerotic aneurysm of the left common iliac artery with perforation and massive bleeding into the retroperitoneal space. The aneurysm was partially filled with thrombus which on microscopic examination was densely infil-

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trated with organisms morphologically resembling staphlococci.

Case 2: (W.W. 29-61-89) A 62-year-old white male was admitted to the University Hospitals on 7 April 1960, four days after the sudden onset of severe left lower quadrant abdominal pain with nausea and weakness. Twelve hours after the onset laparotomy was performed. At operation a large amount of clotted blood was found between the muscle layers of the anterior abdominal wall. No source of bleeding was found and because of a past history of easy bruising and repeated epistaxis it was felt that the patient had a blood dyscrasia. Three days later the patient was transferred to University Hospitals because of oliguria.

On admission the patient was afebrile with a regular pulse of 106, blood pressure of 130/70 and mildly labored respirations. He appeared pale and acutely ill. The abdomen was moderately distended with diminished peristalsis. There was definite tenderness and muscle guarding over both lower quadrants of the abdomen. No masses were detected on abdominal or rectal examination. Femoral pulses were strong and equal but the left dorsalis pedis pulse was decreased compared to the right side. The initial laboratory data were, hemoglobin 6.3 gm. per cent, hematocrit 20 per cent, WBC 12,650, blood urea nitrogen 76 mgm. per cent. Serum electrolytes were within the low limits of normal. Tests of blood coagulation were normal except a mildly prolonged prothrombin time.

Following blood replacement the urine output steadily increased and the patient improved. On the third hospital day he had a sudden onset of severe left lower abdominal pain, hypotension, and an estimated 800 cc. hemorrhage from the abdominal incision. Barium enema performed between bleeding episodes suggested the presence of a mass extrinsic to the colon and displacing the rectum to the right. After several bleeding episodes, each responding to transfusion the patient was taken to surgery. As the abdominal incision was being reopened massive hemorrhage occurred and the patient died. Autopsy revealed a 15 cm. arteriosclerotic aneurysm of the external and common iliac artery with perforation and extensive retroperitoneal hemorrhage.

Case 3: (J.E. 31-66-53) A 74-year-old white male was admitted to University Hospitals on 30 October 1961, four days after the sudden onset of suprapubic pain radiating into both hips and thighs. Twenty-four hours after the onset of the pain an exploratory laparotomy was performed, revealing a large retroperitoneal hematoma. The abdomen was closed and the patient was transferred to this Center.

On arrival at the University Hospitals the temperature was 100°, pulse 108, and blood pressure was 135/75. The abdomen was distended and tympanic. Marked pulsations were palpable over the entire right lower abdomen. No definite abdominal mass was felt. The hemoglobin was 11.2 gm. per cent, and the hematocrit was 35 per cent. Serum electrolytes were normal and the blood urea nitrogen was 38 mg. per cent.

Operation was carried out as an emergency several hours after admission. A 10 cm. saccular aneurysm of the right common iliac artery was excised and an end to end anastomosis of the common iliac artery to the external iliac artery was performed. The postoperative course was uneventful. The patient was discharged on the 11th postoperative day and remains well at the time of this report.

DISCUSSION

The incidence of arteriosclerotic aneurysms of the iliac arteries is not accurately known. Many of the accepted figures are based upon autopsy findings, a notoriously unreliable method of establishing true incidence, or are based upon older series which could not be expected to give an accurate picture of the present occurrence of this disease. Many authors have listed iliac aneurysm as an entity when associated with abdominal aortic aneurysms. It seems probable that aneurysms of the iliac artery due to arteriosclerosis occur about one-tenth as often as arteriosclerotic aneurysms of the abdominal aorta.

Aneurysms of the iliac artery can result from diseases other than arteriosclerosis. There are several reports of such aneurysms following subacute bacterial endocarditis and questionably following trauma. Aneurysms of the internal iliac artery during
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and following pregnancy have been reported. Syphilitic aneurysms of the iliac arteries are uncommon but have been reported. The decline in the incidence of syphilis and subacute bacterial endocarditis has left arteriosclerosis as the most common cause of abdominal aneurysms of all types. Aneurysms due to arteriosclerosis may be either saccular or fusiform. These distinctions are not always clear and frequently the published description of such aneurysms does not allow this separation. It would be of interest to know whether one type is predominant because of the known higher incidence of perforation in the saccular aneurysm.

Clinical manifestation of aneurysms of the iliac arteries are quite variable. Occasionally such aneurysms are visualized on x-ray examination of the abdomen by the presence of an additional small number are discovered at laparotomy for other reasons. When the aneurysms become large, obstruction of the ureters may occur. Pain, if present, is non-specific in character. The lesions are usually not palpable on abdominal examinations although they may become palpable when large. A pulsating mass can be felt occasionally on rectal or pelvic examination. Rupture of the aneurysm without prior symptoms appears to be the most common clinical situation associated with iliac aneurysm. Rupture is generally into the retroperitoneal space with pain and evidence of massive hemorrhage. Such patients usually survive for several days. Rupture of the aneurysm into the gastrointestinal tract has been reported and rupture into the iliac vein is a possibility. (No cases reported)

Treatment of aneurysm of the iliac artery is surgical resection with reestablishment of arterial continuity. Ligation of the artery particularly for aneurysm of the internal iliac artery has been practiced occasionally since the fascinating account of Mott. Because the resection of iliac aneurysms may involve only cross-clamping of the iliac artery, many of the sequelae of prolonged aortic cross-clamping are avoidable and the mortality rate should be lower than for aortic aneurysms.

The cases reported in this communication require little comment except that they emphasize the hazard of aneurysms of the iliac arteries, and the difficulty in making a diagnosis. This case illustrates the therapeutic possibilities with proper management.

SUMMARY

Three cases of arteriosclerotic aneurysm of the iliac arteries, all ruptured before diagnosis was established, have been encountered at the University of Oklahoma Medical Center during the past four years.

These aneurysms present problems in diagnosis because the lesions are usually not palpable until rupture occurs.

Present management of these aneurysms is surgical resection and restoration of arterial continuity.

BIBLIOGRAPHY

24. J. A. Barney, M.D.
25. St. Anthony Hospital, Oklahoma City, Oklahoma

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