# A CASE OF ILIAC ARTERY ANEURYSM ARISING FROM HERNIORRHAPHY AND ITS MANAGEMENT

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**SUMMARY**

*Complications of herniorrhaphy are many but aneurysm of the artery whether iliac or femoral is very rare. It is still possible due to the repair of the posterior wall or any other iatrogenic condition. Unlike an aneurysm due to arteriosclerosis, the high rate of infection complicates the therapy so that normally an extra-anatomic bypass is indicated . In the absence of a bypass, adequate collaterals could be a substitute until the septic wound heals completely. This is shown in the changes of the ankle pressure indices and the claudication distance which increases gradually after closure of the femoral artery, indicating the change in its haemodynamics. Definitive treatment can therefore be delayed for a period of at least one year in a young man till the wound healing is complete as there is a chance of collateral formation.*

It is known that haemorrhage, infection and recurrence are among the common complications of an inguinal hernial repair. Aneurysm of the iliac artery is to be expected, following trauma to the artery. Such a false aneurysm could originate from posterior wall repair and can later be mistaken for a haematoma. Traumatic aneurysm of the iliac artery has not been reported in Ghana.[1] This paper reports of an aneurysm of the right external iliac artery which was detected 4 months after a right-sided herniorrhaphy.

**Key words:** *Hernia, aneurysm, iliac artery. Ghana.*

**CASE:**

A 25 year old farmer was referred with severe bleeding from a swelling in the right groin and a huge abdominal wall defect reaching as far as the pubic bone. He was well until 5 months prior to his referral when he complained of pain in the right groin and had a herniorrhaphy done for an obstructed hernia. He then developed a tender swelling at the distal third of the incision a few days later. He was admitted and treated conservatively with antibiotics and discharged 6 weeks later for treatment on out-patient basis. 4 weeks later this swelling was mistakenly incised resulting in severe bleeding which led to the referral.

The patient who was anaemic on admission was operated upon after blood tranfusion and resuscitation. A huge defect of the abdominal wall was exposed and a ruptured aneurysm about 3cm x 1cm was found involving the distal third of the right external iliac artery about 1.5cm proximal to the Poupart Ligament. The popliteal pulse was present but weak and the pedal pulses could only be detected with the Doppler machine. The aneurysm was excised and the defect closed with a saphenous vein patch graft. This resulted in re-bleeding 3 days later so that the graft was removed and the artery closed transversely with Tevdec 5-0 sutures leaving the wound to granulate. Postoperatively, the pedal pulse was present but weak and the patient recovered under antibiotic cover. He was able to walk 2 weeks later but had a right sided claudication with distance limited to 200 metres. This distance increased gradually so that after 12

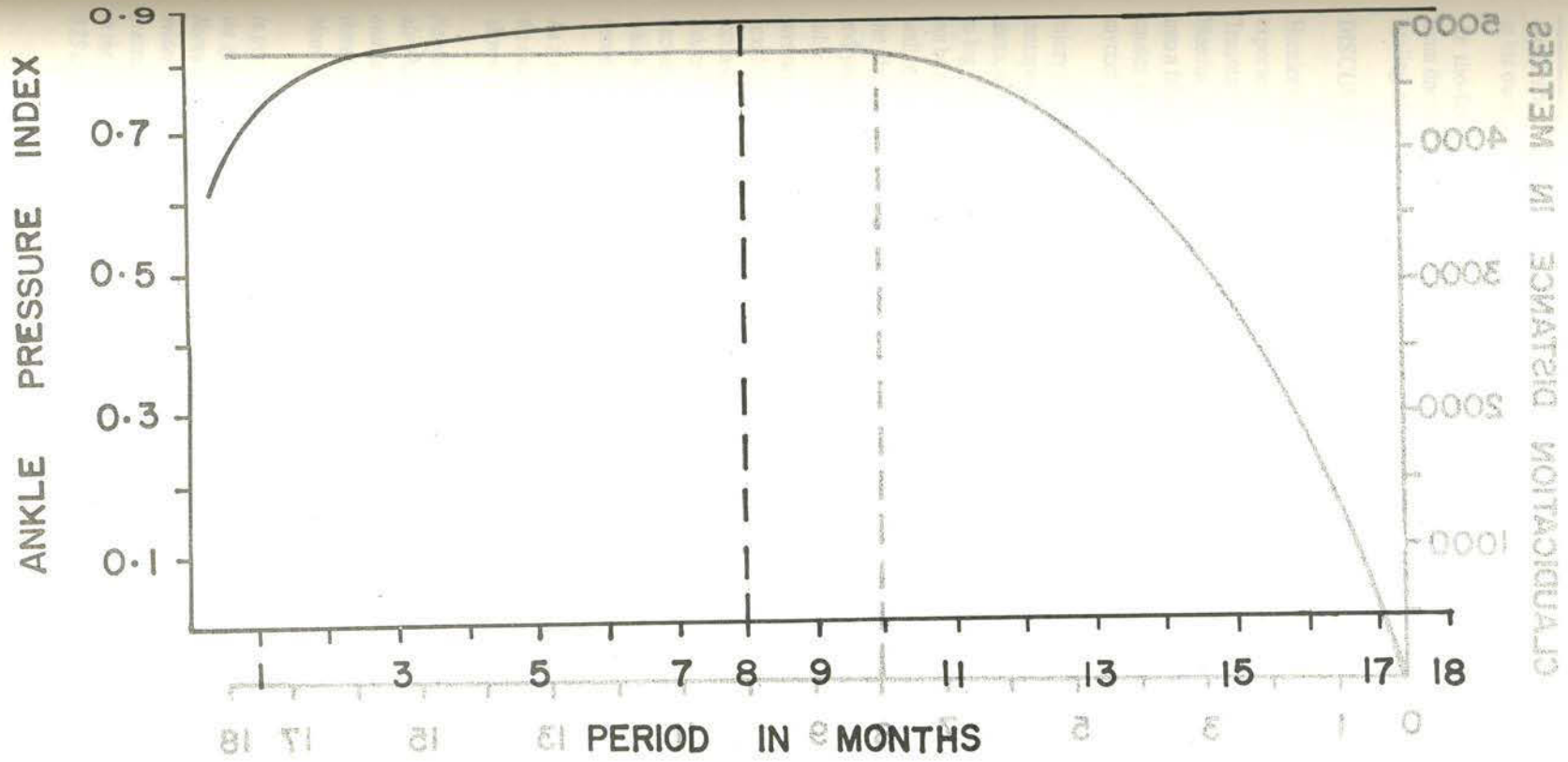


Fig. 1 PRESSURE INDEX RANGED FROM 0·6 IMMEDIATELY AFTER SURGERY AND INCREASED TO 0·86 AFTER 8 MONTHS.

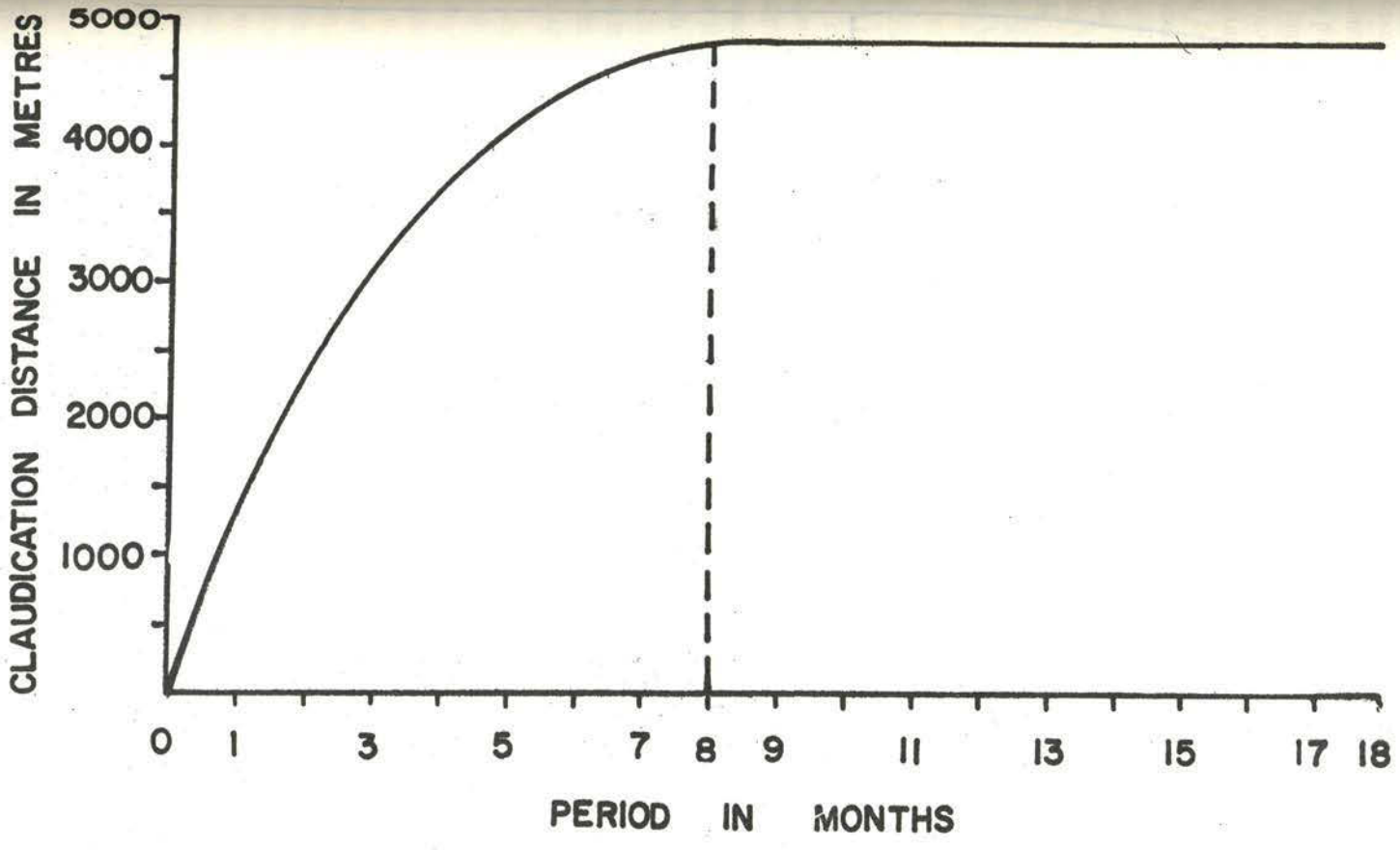


Fig. 2 CLAUDICATION DISTANCE INCREASED RAPIDLY TO ITS PEAK OF 4800 METRES 8 MONTHS POST SURGERY

months he could walk a distance up to 4 kilometres at his own pace on a flat surface.

An ilio-femoral bypass was reconstructed using 6mm dacron graft 15 months later after a complete healing of the abdominal wall degect.

## DISCUSSION

Herniorrhaphy can lead to major complication as expected in other types of surgical procedures. Trauma to a large artery may not lead to immediate bleeding as in cases of the vein but may develop into a false complications. In this case study, other causes of aneurysm such as arteriosclerosis and mycosis were excluded.

Injury to the artery may occur during diagnostic or therapeutic procedures. Other causes are gun shots, stab wounds and industrial trauma.[2] Trauma to big arteries during herniorrhaphy can therefore not be ruled out and this is possible during posterior wall repair. It is therefore necessary to look out for the classical signs of pain, pallor, pulselessness, and paraesthesia among others, on the particular limb affected when an increasing swelling is present in the groin after herniorrhaphy. As a result of extensive necrosis of the skin, a reconstruction is not advisable because of the high risk of infection. Angiograms in such cases[3,4] are necessary in the assessment of the collaterals which then give an idea of the form of therapy necessary.

As a result of ligature of the external iliac artery, the iliac artery bloodflow was severely impaired as shown in the pressure index (Fig1) measured with the Doppler flowmeter. A progressive increase of the pressure index* indicates the presence of collateral formation which is possible in the young patient. An axillo-femoral bypass in this patient was an alternate consideration but this was not necessary since the claudication distance increased with time an the pressure index rose to near-normal level.

The ankle pressure index was initially 0.6 in the affected limbs, compared with 1.2 in the normal limb, but increased as shown in Fig.1. This was reflected by the increase in claudication distance Fig 2. The claudication distance, (the distance walked prior to the onset of claudication). increased rapidly at first and slowed down to reach its peak within 8 months. After this period it remained constant. This time corresponds to the time of formation of collaterals. Definitive reconstruction using dacron prosthesis was indicated since collateral blood flow was inadequate to support normal function of the affected limb, as evidenced by presistence of claudication. This must usually be done early enough before the onset of arteriosclerotic changes, in order to restore normal functions to the affected limb.

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*Non-invasive techniques for detecting peripheral vascular diseases demand such instruments as the doppler ultrasound which has a transmitting frequency in the range of 2 to 10 MHz. Such techniques permit accurate evaluation of the arterial occlusive disease and allow estimation of its physiological significance. The doppler therefore records the blood flow in the peripheral arteries and in combination with a pressure cuff, the systolic blood pressure in the limb could be measured.*

*In this patient the ankle pressure was measured by placing the pressure cuff just above the ankle joint and the systolic pressure in both the posterior tibia and dorsalis pedis arteries was measured with the doppler. Normally, findings of an ankle pressure below that of the arm, a difference more than 10mm Hg [1], is good evidence of arterial occlusive disease[2] The ankle pressure index which is the ratio between the ankle systolic pressure and the arm systolic pressure is normally greater than 1 at rest and averages $1.1 \pm 0.10$[3]. A decrease in the pressure index indicates the presence of an arterial disease while a consistent decrease of more than 0.15 indicates the worsening of the disease [4].*

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