

IATROGENIC INJURY TO THE INTERNAL ILIAC VEIN: A LIFE THREATENING COMPLICATION OF INTERNAL ILIAC ARTERY LIGATION

Okonkwo CA¹, Ande ABA², Ovbagbedia O³, Anyanhun G⁴

ABSTRACT

Bilateral internal iliac artery ligation is an invaluable tool in the management of obstetric haemorrhage. However complications could occur and if not properly managed it could result in morbidity or even mortality. We report a case of iatrogenic injury to the left internal iliac vein during internal iliac artery ligation for severe post partum haemorrhage following Abruptio Placentae, which was successfully managed and the patient did well post operatively.

KEY WORDS: Post partum haemorrhage, Internal iliac artery ligation, Internal iliac vein injury.

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INTRODUCTION

Pelvic haemorrhage, whether postpartum or related to surgery, is associated with a great degree of morbidity and mortality and has to be controlled immediately without compromising the rest of the pelvic blood supply.¹ Ligation of the internal iliac arteries, a time tested easy method achieves the goal as seen by extensive radiographic studies.²

Uterine atony is the commonest cause of life threatening obstetric haemorrhage. In women not responding to medical treatment, the

traditional surgical treatment is to perform an emergency hysterectomy, eliminating any future fertility. Bilateral internal iliac artery ligation is an alternative operation which preserves reproductive capacity.³ Bilateral internal artery ligation is mainly indicated in postpartum haemorrhage due to uterine atony rather than obstetric trauma.³ However, some report its successful use in patients with ruptured uterus and placenta accrete.⁴

Bilateral internal artery ligation is rarely associated with complications. Complications which can occur include damage to the ureter, iliac veins and accidental ligation of the external iliac artery. These complications can be avoided by appreciation of important surgical anatomy and meticulous dissection. Venous bleeding can occasionally be very troublesome.³ The aim of this case report is to highlight one of these complications, its severity and how it was effectively managed.

CASE REPORT

Mrs. YJ. was a 26 year old Para 2 referred from a Private Clinic on account of bleeding per vagina at 38 weeks gestation. An impression of severe Abruptio Placentae was made. Her Packed Cell Volume was 25%, Urea and

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1. Dr. Okonkwo CA, FMCOG, FICS
 2. Dr. Ande ABA, FWACS, FICS
 3. Dr. Ovbagbedia O, FWACS
 - 1-3: Department of Obstetrics and Gynecology,
 4. Dr. Anyanhun G, FMCS
Department of Surgery,
Cardiothoracic Unit,
1-4: University of Benin Teaching Hospital,
Benin-city - Nigeria.

Correspondence

Dr. Okonkwo CA,
Department of Obstetrics and Gynaecology,
University of Benin Teaching Hospital,
Benin-City, Nigeria.
E-Mail: drcaokonkwo@yahoo.com

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Electrolytes and urinalysis were normal. Her Blood Group was O Rhesus Positive and 4 units of blood were cross matched for her.

She was resuscitated with a litre of Normal Saline and prepared for an emergency Caesarean Section. The findings at surgery were, a live male neonate 2.5kg with mild birth asphyxia, Couvelaire uterus and retro-placental clots. The estimated blood loss was two liters. The patient had 4 units of whole blood transfused and high dose Syntocinon infusion was commenced to improve uterine contractility. An hour post operative, the patient was noticed to be bleeding per vagina and had lost approximately 500mls of blood even though an intrauterine pack was in place. The high dose Syntocinon infusion was continued and 600micrograms of misoprostol was inserted into the rectum. Ten international units of Syntocinon were given intramyometrially. All these measures failed to stop the bleeding thus she was prepared for laparotomy and bilateral internal iliac artery ligation.

At surgery, the previous skin incision which was a mid-line subumbilical incision was opened to the peritoneal cavity. Abdominal packs were used to hold back the abdominal contents and the pelvic brim examined. The ureter was identified where it crossed the common iliac artery at the point of its bifurcation. The peritoneum was opened and the ureter lifted off its bed, a haemostatic stitch, chromic catgut No. 2 was used to ligate the internal iliac artery on the right, using an Aneurysm needle. The same procedure was repeated on the left side but during the process of ligating the artery, the tip of the Aneurysm needle traumatized the internal iliac vein and this provoked torrential bleeding. Pressure was immediately applied to the vein while the ligation was completed. This only reduced the bleeding temporarily and the bleeding continued as the surgeons struggled to secure haemostasis. A clamp was applied to the distal part of the vein and this completely arrested the bleeding. A Vascular Surgeon was called in and the internal iliac artery was double ligated with Silk No.1 suture and transected in order to gain clearer

access to the internal iliac vein. The vein was then ligated with Silk No. 1 suture close to the common iliac vein and below the area of trauma. Haemostasis was secured and the uterine bleeding stopped. The estimated blood loss from this second operation was 2.5 litres. The patient had a total of five units of whole blood, three units intraoperatively and two units postoperatively.

Postoperatively she was placed on antibiotics, her left leg was elevated and early ambulation was commenced by the 2nd postoperative day. The Physiotherapists also commenced her on exercises of the left lower limb. The Packed Cell Volume was 33% on the 3rd post operative day. The left foot was noticed to be swollen by the 7th postoperative day and leg stockings were prescribed. The leg swelling later resolved and she was discharged home on the 21st postoperative day. She has had three clinic appointments in the last six months and both mother and baby are doing well.

DISCUSSION

Howard Kelly¹ of Baltimore in 1894 was the first to ligate the internal iliac arteries along with the ovarian arteries for bleeding cervical carcinoma with extensive broad ligament involvement. Bilateral internal iliac artery ligation minimizes the pulse pressure of the arterial system, converting it to a venous-like system, this reduces bleeding appreciably by facilitating clot formation distal to the site of ligation.²

The severe postpartum haemorrhage which Mrs. YJ suffered was controlled by the internal iliac artery ligation. Apart from controlling haemorrhage, bilateral internal iliac artery ligation also conserves fertility, Wagaarachchi³ and others reported a pregnancy rate of 50% following bilateral internal iliac ligation. The alternative management of severe haemorrhage is hysterectomy, giving the patient no chance of future fertility. Other advantages of bilateral internal iliac artery ligation has over hysterectomy include the fact that it requires less operative time in experienced hands, less post-operative morbidity. Hyster-

ectomy is associated with trauma to the bladder, which needs to be reflected down to incorporate the indistinct post-delivery cervix, haematomas, post-operative adhesions, and vault prolapse.³

Bilateral internal iliac artery ligation is not without complications as we saw in Mrs. Y.J.'s case. In a review of 46 ligations, Nandanwar¹ and others had one case of ureteric injury and one of superficial injury to the internal iliac vein. Wagaarachchi³ in his series of 12 cases reported only one case of venous bleeding which responded to direct pressure.

The internal iliac vein was ligated in this case in order to arrest haemorrhage. Ligation of the internal iliac vein would lead to opening up of the collaterals between the uterine and ovarian veins, the middle and the superior vesical veins, the iliolumbar with the last lumbar and the lateral sacral with the middle sacral veins.⁵ Bilateral internal iliac artery ligation remains a safe, fast, effective and life saving procedure which should be encouraged and used routinely by Obstetricians when faced with cases

of severe obstetric haemorrhage not responding to medical treatment. Complications such as injury to the internal iliac vein are uncommon and can be treated by sustained pressure or ligation as was done in this case. There is need for Obstetricians to acquire skills to safely ligate the internal iliac artery and also successfully manage complications if they ever arise.

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