INTERNAL ILIAC ARTERIES LIGATION — AN EFFECTIVE METHOD IN THE CONTROL OF PELVIC HAEMORRHAGE

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SUMMARY

Internal iliac ligation was performed in 13 cases. Four amongst them were gynaecologic cases and rest were obstetric. Obstetric cases included P.P.H., ruptured uteri, DIC, extensive genital tract lacerations and atonic uteri; while gynaecological cases were of pelvic malignancy and tumours. Three deaths occurred in this series but these were not due to procedure itself. Two cases were in irreversible shock and one with acute renal failure. Other patients had ultimately an uneventful recovery.

INTRODUCTION

Massive obstetric haemorrhage is still an important cause of maternal mortality[1]. Serious bleeding after benign gynaecologic disorders is uncommon fortunately[2]; however, advanced malignant condition can result in massive pelvic haemorrhage. Various methods have been adopted to arrest pelvic haemorrhage. Bilateral internal iliac arteries ligation (IAL) with or without ovarian vessels ligation is one of the most useful method for the control of pelvic haemorrhage.

MATERIAL AND METHODS

Cases were collected in Gynae "A" Unit, Postgraduate Medical Institute, Lady Reading Hospital, Peshawar from July 1992 to March 1994. Majority of them were admitted in emergency. In many of the cases other procedures were also performed before ligation of internal iliac arteries. These procedures were oxytocic drugs, hysterectomy packing etc.

Obstetric cases were of ruptured uterus, atonic uterus, DIC or extensive lacerations. Gynaecologic cases included Carcinoma cervix, chorio carcinoma and fibroid uterus.

Transperitoneal technique was adopted. A longitudinal incision was given about 4-5 cm in the pelvic peritonium at the level of bifurcation of common iliac artery inferior and lateral to the ureter. Peritoneum with ureter was gently reflected medially. The internal iliac artery was exposed and two ligatures of black silk No. 1 were placed around anterior division with the help of long curved clamp 0.5 cm. appart. The femoral pulsations were felt before and after the ligation of the vessels.

RESULTS

Patients of all ages and parity were included. Bilateral internal iliac arteries were ligated in 12 cases while in one case unilateral ligation stopped bleeding (this was a case of left sided broad ligament fibroid).

Amongst 9 obstetric cases 3 were with ruptured uteri, 3 DIC, 2 atonic uteri and one with extensive pelvic lacerations. In ruptured uteri where

TABLE–I

TYPE OF PATIENTS		
TOTAL	OBSTETRIC	GYNAECOLOGY
13	9	4

complicated tears and involvement of broad ligament made haemostasis difficult, even hysterectomies or repair could not arrest haemorrhage. In 6 cases haemostasis was secured successfully (Table II). 2 patients died immediate postoperatively because they were in irreversible shock due to DIC. 3rd death occurred due to acute renal failure on 10th postoperative day (Table III).

There were four gynaecologic cases. One was young patient with choriocarcinoma. Growth had perforated the uterus. Uterus and adnexa were friable and had profuse intraperitoneal bleeding. Pelvic clearance was performed after ligating the vessels. 2nd case was advanced Ca cervix, patient had repeated episodes of bleeding which could not be arrested with packing. Haemostasis was secured with IAL and then treated with radiotherapy. 3rd case was pregnant perforated uterus and fourth case left sided broad ligament fibroid, the removal of which resulted in massive haemorrhage; unilateral IAL stopped bleeding.

Follow up till six weeks did not reveal any complication.

DISCUSSION

Internal iliac artery is the major supply to the contents of the pelvis above and below the pelvic diaphragm and to the vulva and perineum.[3] Ligation of internal iliac is a life saving procedure, but the decision should be made before the patient's condition deteriorates to an irreversible state.[4] In this series patients who died probably could have been saved, had the procedure been performed at an earlier stage. It was first performed by Kelly in 1894 who said that prophylactic internal iliac artery ligation does not adversaly affect the blood flow to pelvic viscera.[5] This operation results in the reduction in the pulse pressure distal to the ligature rather than interruption of blood supply, because of collateral circulation, and pelvic ischemia is uncommon.

TABLE–II

Case done No.	Age Yrs.	Parity	Cause of Haemorrhage	Other Procedures	Why IAL done
1	40	5	Ruptured uterus	Hysterectomy	Broad ligament involvement
2	36	5	Incomplete rupture	"	Persistent bleeding
3	35	2	" "	Repair	Broad ligament involvement
4	30	7	DIC	Hysterectomy	Persistent bleeding
5	35	5	Ruptured uterus extensive laceration of vagina cervix opened pouch of	Hysterectomy Daglon	Profuse bleeding from laceration and tears
6	35	1	PPH	Oxytocic drugs	Persistent bleeding

TABLE-III

OBSTETRIC PATIENTS WHO DIED

B.No.	Age yrs.	Parity	Cause of Haemorrhage	Other procedure performed	Cause of death
1	40	7	PPH atonic uterus	No Hysterectomy only IAL	Irreversible shock
2	32	8	PPH DIC	Hysterectomy only	"
3	30	2	Abruptio PPH Atonic uterus	Only IAL	Acute renal failure died after 10 days

Clark et al (1985) found the procedure to be effective in controlling bleeding in less than half of the 19 patients. They felt that complications associate with procedure were due to a delay in carrying out the definitive treatment (hysterectomy) rather than the procedure itself.[6].

There are several other approaches to control haemorrhage. For uterine atony massage, oxytocic drugs or intra arterial injection of vasoconstrictive agents have been tried. Mud et al (1987) used intra arterial infusion of dopamine Hel[7] while vasopressin has been used.[8] Hysterectomy is preferable for patients who have completed their families. Uterine rupture usually requires hysterectomy but when it is associated with extensive lacerations and involvement of broad ligament (haematoma) then IAL is necessary.

For gynaecologic cases iliac artery embolization is frequently preferable to operative IAL because haemorrhage is often encountered other than during surgery. Some of the people have used it as (ILA) prophylactic procedure in radical operation for gynaecological malignancy.[9]

The complications of procedure are not many as there is extensive collateral circulation. The principal arterial anas-

TABLE–IV

FEATURES OF GYNAECOLOGY CASES

S.No.	Age	Cause of bleeding	Other procedure performed	Further management
1	28	Chorio carcinoma	Hysterectomy with bilateral salpingo oopherectomy	Chemotherapy
2	70	Stage III CA Cervix	Packing	Radiotherapy
3	29	Perforated repairing pregnant uterus with involvement of broad ligament		—
4	40	Primary Haemorrhage after myomectomy	Hysterectomy with removal of fibroid	

tomotic channels are[1] lumber, ilio lumber.[2] middle sacral, lateral sacral,[3] superior haemorrhoidal and middle haemorrhoidal. Regarding postoperative complications Evans and MC-Shane (1985) in their series of 18 patients have reported one patient with post ischemic motor neuron damage and ischemia of the central pelivc area with breakdown of perianal region and episotomy site. Another patient had a right common iliac obstruction and needed by pass graft.[11]

In brief IAL is an effective and simple method to control massive haemorrhage and should be tried more frequently when needed.

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