SCOPE OF INTERNAL ILIAC ARTERY LIGATION IN OBSTETRICS AND GYNAECOLOGICAL EMERGENCIES

By

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SUMMARY

Ten cases of bilateral internal iliac artery ligation—seven for various obstetrical conditions and three for gynaecological conditions, has been done as an emergency life saving measure during last three and half years at Eden Hospital. Functional integrity of the internal female genital organs of six cases where the uterus was preserved was studied.

Introduction

Ligation of internal iliac artery was first performed by Kelley (1894). He stated that such type of operation would cut off all the vascularity of the pelvis. Later on this statement was proved to be wrong by Burchell (1968). He had experimentally proved that there would be no actual decrease of blood flow to the pelvic artery except marked drop of pulse pressure distal to the ligature and there would be alteration in path ways and reverse direction of flow in some arteries.

The pelvis is highly vascular and has got abundent collateral circulation. Internal iliac arteries are the main source of blood supply to the internal female organs. Haemorrhage following obstetrical manoeuvre and operations are much more common practice to preserve the uterus in child bearing period and this can only be achieved by ligating the internal iliac arteries based on the knowledge of pelvic vasculature. In this paper the main idea of the author is to find out how far bilateral internal iliac artery ligation is successful in reducing maternal mortality following pelvic haemorrhage and at the same time to preserve the functional integrity of the internal female genital organs.

Material and Methods

The materials of this present study were collected from the department of Obstetrics and Gynaecology, Medical College Hospital, Calcutta from 6-9-1984 to 15-2-1988. All the cases of bleeding folowing obstetrical and gynaecological conditions were studied personally by the author. During the study period in ten such cases (7 Obs. & 3 gyn.) internal iliac arteries were ligated by intraperitoneal methods by the author himself.

Causes of such intractable bleeding following Obstetric & gynaecological operations, manoeuvre were noted. General con dition, Hb estimation and management fo haemodynamic stabilisation were recorde by the author himself. Post operative follc up and subsequent evaluation of the fur tional integrity was studied by the autho

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TABLE I
Patients Profile

	Age in yrs.	Parity	Onset of haemorrhage	Recurrence of haemorrhage	Site of haemorrhage	Trt. given	Indications of internal iliac ligation
Obstetric cases	24	0 + 0	During operation	nil	Rt. sided lat. rupt. ut. with broad ligament haematoma	Repair of uterus, ligation of Int. 1A with bl. trans. (4 units).	Broad ligament haema toma
	27	0 + 0	15th Post oper. day	Twice-21st and 38th post oper. day	C.S. wound of ut.	Oxytocics, bl. trans. (12 units), E.U.A. (twice), Lap. (twice) sub. total hyst. with int. 1 li. lig. done, antibiotics.	Secondary P.P.H.
	21	0 + 0	16th post oper. day	Once-19th post oper. day	-do-	Oxytocics, bl. trans. (3), E.U.A. lap int. iliac lig, antibiotics	Secondary P.P.H.
	25	0 + 0	5 hours after delivery	nil	Cerv. tear upto broad ligament.	Oxytocics, bl trans., E.U.A. lap. lig. of int. iliac art.	reactionary haemorrhage
	20	1 + 0	During operation	nil	Adherent pl. in post C.S. case.	Oxytocics, partial removal of pl., int. Ili. lig., bl. trans.	Primary P.P.H.
	32	2 + 1	after closing the abdomen	nil	Adherent pl. in post C.S. with A.P.H.	Oxytocics, removal of pl reopening of the abd. and ut., repair of ut. with lig. of int. Ili. Art. bl. trans. (3).	Primary P.P.H.
Gynaecological cases	22	0 + 0	During operation	Once after 10 hours of C.S.	C.S. wound extension with broad lig. haematoma.	Oxytocics, bl. trans. (A-ve 3, O-ve 2), steroid, haemocele, lap. lig. of int. iliac	Primary P.P.H.
	48	3 + 0	5th post operative day	Twice-9th and 14th post oper. day	Vag. vault after vag. hyst. with P.F.R. vaginal	Conservative trt., E.U.A., stitches in the vault, laparotomy internal ili. lig. blood trans (12).	Secondary haemorrhage
	50	3 + 0	25th post oper. day	nil	Vaginal vault after abd. hyst.	Conservative, E.U.A. laparotomy int. iliac. lig., bl. tran. (2).	Secondary haemorrhage
	46	3 + 0	9th post oper. day	Twice-11th, 13th Post op. day	Vag. vault after abdominal hysterectomy	E.U.A. vicryl stitches conservative lap.—ligation of int. iliac artery, bl. tran.	Secondary haemorrhage

Patient profile and management have been tabulated below.

Analysis and Observation

It has been observed in the Table I that all obstetrical patients were young primigravidae and gynaecological cases were postmenopausal. Two cases came from outside and in rest primary operation/manoeuvre was done in this hospital. All the patients were treated with usual chemotherapy and resuscitative measures for haemodynamic stabilisation which according to Stephen *et al* (1985) is mandatory, but in case 4 and 7—we had to ligate Int. Iliac artery before haemodynamic stabilisation with uneventful recovery. In reviewing the literature it has been found—that Lucas (1980) stated that the safest and most rapid method of surgical treatment to control severe P.P.H. is bilateral ligation of Int. Iliac artery below their origin, Kaur (1980), Dutta *et al* (1980) also opined similarly. In this series four cases out of seven obstetric cases had primary P.P.H. folowing C.S. and haemorrhage was stopped by ligating Int. iliac artery. In two cases bleeding occurred on 15th and 16th day after C.S. In case 2 subtotal hysterectomy with bilateral internal iliac artery ligation was done due to gross intrauterine sepsis, case 1—a case of rupture uterus with big broad ligament haematoma, considering her age, uterus was repaired and bilateral Int. iliac ligation was done. She had successful pregnancy after two years. Mengert *et al* (1969) reported successful pregnancy following bilateral Int. Iliac Artery ligation. Stephen *et al* (1985) failed to control bleeding in cases of placenta accreta and uterine laceration in 57% cases which ended in hysterectomy. The same auhor was able to control bleeding in all cases of atonic bleeding by bilateral Int. Iliac ligation. In this series 2 cases of placenta accreta and 3 cases of uterine laceration responded well with bilateral ligation of internal iliac artery. Postoperative bleeding from vaginal vault following hysterectomy can be controlled by Int. Iliac ligation where other method fail (Purwar *et al* (1981), Rajan *et al* (1981). In this series there was one case of vaginal vault bleeding following vaginal hysterectomy with PFR and in two cases following abdominal total hysterectomy with bilateral salpingo oopherectomy. All the cases reponded very well after internal iliac ligation.

Conclusion

Ligation of internal iliac artery is a life saving method in obstetric and gynaecological practice to control pelvic haemorrhage when other methods have failed. Decision must be quick with or without haemodynamic stabilisation of the patient.

Surgeon should always try to preserve the uterus for future menstrual and reproductive function in young woman.

One must keep in mind the anatomical relation of internal iliac artery with the ureter and external iliac veins.

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