

SAVING LIFE BY HYPOGASTRIC ARTERY LIGATION

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SUMMARY

Hypogastric artery ligation was done in 38 cases during the last 7 years. It was done for controlling primary PPH in 10 cases, secondary PPH in 12 cases, Broad ligament haematoma in 4 cases, bleeding from cancer cervix in 5 cases, and chorio-carcinoma in 3 cases. It was also done in 4 cases during Wertheim's Hysterectomy as a prophylactic measure against excessive bleeding. This procedure was found to be quick and effective in controlling life-threatening haemorrhage in all except one case who required hysterectomy. There was no operative mortality and the post-operative period was uneventful in all the cases. Fertility and menstrual functions were not affected by this procedure.

INTRODUCTION

Ligation of hypogastric artery was first performed by Kelly in 1894 and now has been universally accepted as a life-saving procedure when uncontrollable uterine bleeding threatens the life of the woman.

MATERIALS

The procedure was done in 38 cases in the present series 31 at Shivam Hospital

and 7 at Chikitsa Nursing Home, Patna. Both these institutions have obstetric emergency units.

Except in Wertheim's hysterectomy cases, the procedure was adopted only when definitive measures to control bleeding either failed or were not feasible. Cases of PPH formed the major bulk of the series.

All the cases of primary PPH in the present series requiring hypogastric artery ligation, followed C.S. for major degree of placenta praevia and the bleeding continued inspite of all measures.

Table I
SHOWING INDICATIONS FOR H.A.L. IN THE PRESENT SERIES
(Total 38 cases)

	No. of cases.
Primary P.P.H.	10
Secondary P.P.H.	12
Broad ligament haematoma during C.S.	2
during A.P.H.	2
Cancer cervix	5
Chorio-carcinoma	3
During Wertheim's hysterectomy	4

All the cases of secondary PPH were referred cases, delivered 18 to 30 days prior to referral. 4 of them had delivered vaginally and 8 by C.S. All of them were severely anaemic and uterine exploration had already been attempted once, twice or even thrice. They used to have intermittent heavy bleeding episodes. H.A.L. was done in 6 cases of cancer cervix and 3 cases of chorio-carcinoma, because they were having intermittent profuse vaginal bleeding which could not be controlled even by tight vaginal packing and due to severe anaemia, the patients could not be given definitive treatment.

PROCEDURE

Intra-peritoneal approach was used in all the cases. After opening the abdomen, the uterus was pulled to one side which exposed the posterolateral pelvic peritoneum. The ureter was identified along the pelvic wall. The peritoneum was incised about 1" above its course in upper part of pelvis. External iliac artery was now

easily identified along the psoas muscle. It was traced upto its origin. Internal iliac artery was then followed down and was ligated with thread about 1" distal to its origin beyond its bifurcation. Proper ligation was assured by the absence of pulsation distal to the ligature. Care was taken not to injure ureter and iliac veins during this process. The peritoneal incision was now closed.

The ovarian branch of uterine artery was also ligated as a supplementary measure near the uterine cornu in the mesosalpinx, except in case of unilateral haematoma. Abdomen was then closed.

OBSERVATION

There was no operative mortality in the present series inspite of the poor general condition of the patients. The post-operative recovery was uneventful in all the cases. The cases of PPH resumed normal menstruation within one year and 8 of them conceived again within 2 years. Massive PPH,

recurred in 2 of them during the next confinement also when hysterectomy was done. The cases of malignancy (Cancer Cervix and Choriocarcinoma) showed remarkable improvement in their general condition as the intermittent bleeding episodes were controlled. They were thus rendered fit to undergo definitive treatment.

DISCUSSION

Haemorrhage is one of the leading causes of maternal mortality in developing countries. It is more so because anaemia is too common whereas blood transfusion services and high-tech facilities are either non-available or scarce. Hypogastric artery ligation is especially useful for those cases of PPH who fail to respond to ordinary measures, but hysterectomy is relatively undesirable due to low age and parity.

In the course of Wertheim's hysterectomy, internal iliac artery is ligated early before contemplating deep dissection. The blood loss is considerably minimised and the field is rendered more clean and dissection easier.

It is really surprising how circulation to genital organs is maintained after obliterating their major blood supply. Burchell (1968) by serial arteriograms taken before and after the procedure has demonstrated that small branches of internal iliac artery anastomose with those from aorta, external iliac and femoral arteries and efficient circulation is immediately established after ligation of the internal iliac artery. Mean arterial

pressure is reduced by 24% and pulse pressure by 85%, the arterial system is thus transformed to a venous like system and bleeding is controlled.

The decision to undertake this procedure should however, be taken early when the patient's condition is still satisfactory because, if she goes into shock the risk of any operative intervention becomes very high. This is especially so for PPH cases in whom the scale turns down within minutes. Donald (1979) has rightly stated the III stage of labour to be the unforgiving stage which demands sure and swift judgement by the obstetrician with no room for complacency.

Newer techniques are now becoming available which very effectively control bleeding from a particular vessel even in an unstable patient e.g. precutaneous transcatheter embolization with microspheres, of gelfoam and autologous blood clots. But these procedures are not yet available for our mass population. Under such circumstances hypogastric artery ligation appears to be a safe, simple cheap, quick and effective procedure especially useful for set-ups like ours. This procedure does not require any sophisticated costly instruments, but the two hands of the surgeon to act and a good vision to identify the pelvic structures. It can be done at any place where there is facility for surgery and anaesthesia. It must therefore, be learnt by all those who have undertaken or are going to take up obstetrics and gynaecology as their career.

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