

# Role of internal iliac artery ligation in postpartum haemorrhage

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## Abstract

Postpartum haemorrhage in pregnancy is the leading cause of maternal mortality in developing countries. An estimated blood loss in excess of 500 ml following vaginal birth or loss of greater than 1000 ml following caesarean section often has been used for the diagnosis of postpartum haemorrhage. Even with an accurate measurement method quantity of blood lost is often less importance than the effect it has on the women, which depends on her blood volume and any underlying health factor. For that reason, it has been suggested that a useful definition taken into account as any blood loss that cause a major physiological change, as the risk of dying from pph depends not only on amount and rate of blood loss but also on health of mother. Present paper aim is to share author's experience about. Procedure i.e. internal iliac ligation which is surgical procedure and help in arresting postpartum haemorrhage. Study was done over a period of 5 years at tertiary health care centre and result was found that haemorrhage could be arrested in all cases.

**Keywords:** internal iliac artery ligation.

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Medical College, Nanded. Data analysis was done in relation to indication and complication related to surgical procedure. Indication for internal iliac artery ligation

| Sr. No. | Indication        | No. Of Cases |
|---------|-------------------|--------------|
| 1       | Atonic PPH        | 25           |
| 2       | Traumatic PPH     | 10           |
| 3       | Ruptured uterus   | 5            |
| 4       | Abruptio placenta | 8            |
| 5       | Placenta accrete  | 5            |
| 6       | Placenta previa   | 8            |
| 7       | Eclampsia         | 10           |
| 8       | others            | 4            |

## INTRODUCTION

One of the important method of controlling postpartum. Haemorrhage is the ligation of internal iliac arteries. Procedure was the performed for the 1<sup>st</sup> time by SIR HORWARD KELLY in 1893 in control of haemorrhage during hysterectomy for uterine carcinoma<sup>2</sup>. In obstetrics, massive bleeding due to atonic<sup>3</sup> or traumatic. Postpartum haemorrhage, adherent placenta and rupture uterus are main indications. The present study is aimed at sharing the authors experience in regard to indications, usefulness and safety of internal iliac ligation in control of haemorrhage.

## MATERIAL AND METHODS

Study comprised of analysis of 75 cases of internal iliac artery ligation performed by author over 5 yrs period at tertiary care centre, Dr. Shankarrao Chavan Government

Internal iliac ligation used prophylactically in patient of Idiopathic thrombocytopenic purpura, portal Hypertension, jaundice, HELLP syndrome, eclampsia. Surgery was performed by auther under general anaesthisa or spinal anaesthesia used during procedure in tertiary care centre.

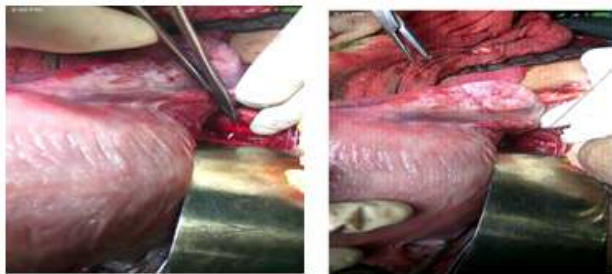
## Site of Internal Iliac Artery Ligation

Procedure requires expert surgical skill and clear knowledge of retroperitoneal anatomy.



**Figure 1:** Retroperitoneal anatomy showing external iliac artery, vein and ureter

After identifying the ureter at the pelvic brim, the peritoneum opened starting from a point just proximal to the bifurcation of common iliac artery. Incision extended gently with finger dissection. Ureter and peritoneal flap are retracted medially. The fascia around the internal iliac artery dissected. Completely, haemostasis confirmed. Mixer was passed beneath the internal iliac artery from lateral to medial side about 3-4 cm distal to its origin. With the help of vicryl no 1-0, two ligatures are usually planed around the anterior division of internal iliac artery. Pulsation of the external iliac artery must be checked to confirm that blood supply to this vessel has not compressed. In 6 cases B-Lynch<sup>8,9</sup> suture taken with catgut no. 1 to prevent haemorrhage due to atonicity instead of doing obstetric hysterectomy.



**Figure 2:** Mixer passing from lateral to medial side below internal iliac artery

**Figure 3:** Vicryl No.1 passing through internal iliac artery

### HEMODYNAMIC CONSIDERATION

The main underlying principle in the ligation of internal iliac artery for control of postpartum hemorrhage is conversion of arterial pressure circulation into a venous pressure circulation. Bilateral internal iliac artery ligation decreases the pulse pressure by 85%.<sup>4</sup> Collateral circulation becomes functional as early as 50-60 minutes after ligation.

### RESULT AND DISCUSSION

Over period of 5 year from 2012-2016 there were 75 cases. Underwent IAIL at DR.S.C.G.M.C. NANDED INDIA. Out of 75 cases 25 patients had emergency caesarian section and remaining 50 patients requires laparotomy for pph in normal vaginal delivery. One of the reasons for resorting to surgical techniques when conservative measures have failed<sup>10,11</sup>. Atonic uterus and traumatic pph are common indication for therapeutic internal iliac artery ligation. Prophylactically 10 internal iliac ligation done. Indication includes- eclampsia, placenta accreta, placenta previa, incomplete abortion, retained placenta, jaundice, ITP, HELLP syndrome. After successful control of pph with IAIL, no patient had. Delayed haemorrhage and requires relaparotomy. However in 6 cases after IAIL, B-Lynch suture required due to atonicity of uterus instead of doing obstetric hysterectomy. Injury to plexus around internal iliac artery result in bleeding which is managed by pressure tampons n haemostasis gets achieved. No evidence of internal iliac vein injury, gluteal ischemia, bladder necrosis<sup>5,6,7</sup>, ischaemic nerve injury<sup>5,6,7</sup> in postpartum period during hospital stay or 6 weeks of follow up. There were 3 maternal death unrelated to pph had occur. 2 were due to eclampsia with intracranial bleed and 1 due to hepatorenal failure with HELLP syndrome. Blood supply and FFP supply essential in every patient those. Underwent internal iliac artery ligation.

### CONCLUSION

Timely intervention in the form of internal iliac artery ligation in cases of pph from any cause prevents haemorrhage and avoid obstetric hysterectomy. This helps in reducing maternal mortality rate. Keywords- Internal iliac artery ligation. Postpartum haemorrhage.

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