



Effect of Internal Iliac Artery Ligation in Postpartum Haemorrhage

KEYWORDS

Post Partum Haemorrhage , Internal Iliac Artery Ligation.

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ABSTRACT Postpartum Haemorrhage is one of the important cause of maternal mortality in both developed and developing countries. Blood loss of 1000ml or more occur in 1-5% of deliveries. Internal iliac artery and its branches supply the pelvic organs. Bilateral ligation of Internal Iliac Artery is one of the life saving surgical technique in case of post partum haemorrhage. In our Thoothukudi medical college (TKMCH) a tertiary referral centre we did a retrospective study by analyzing the case sheets of patients who underwent Internal Iliac Artery Ligation between Jan 2015 to Dec 2015 to study the effect of Internal Iliac Artery Ligation in Post Partum Haemorrhage. In our institute totally 13 patients underwent Internal Iliac Artery Ligation during the study period for post partum haemorrhage. There was no intra or post operative complications and all patients discharged in good health. In our study the success rate of internal iliac artery ligation is 100%. Especially in primipara, we retained the uterus thereby future fertility by this conservative surgical technique. Hence Internal Iliac Artery Ligation still remains an important effective, life saving procedure in Post Partum Haemorrhage.

Introduction

Postpartum Haemorrhage is responsible for around 125000 maternal deaths every year and with morbidity in 20million women [1]. Postpartum Haemorrhage is defined as sufficient amount of blood loss causing hypovolemia and a 10% drop in the hematocrit or requiring blood products transfusion [2]. The risk factors for PPH includes: multiparity , previous Postpartum Haemorrhage, Antepartum Haemorrhage, operative deliveries, prolonged third stage of labour, abnormal placenta-tion, maternal obesity and a distended uterus (Big baby, polyhydramnios and multiple gestation [3, 4]. The most common causes of Postpartum Haemorrhage are uterine atony, Retained products of conception, trauma of genital organs and coagulopathies [5]. When Postpartum Haemorrhage occurs intensive medical management should be attempted first surgical management should be considered if bleeding is not controlled with medical management. The choice of surgical method depends on the parity of women and her desire for conserving the uterus. In most of the occasions hysterectomy is performed in order to arrest haemorrhage and as a life saving procedure. There are some conservative surgical procedures that preserve the uterus which included uterine artery embolisation, uterine artery ligation, Brace sutures and Internal Iliac Artery Ligation.

IIAL is considered as an effective way to control intractable Postpartum Haemorrhage and in preventing maternal mortality. Following ligation of internal iliac artery, pulse pressure is reduced to 85% and pelvic blood flow is reduced to 48% in the arteries distal to ligation [6]. Hence arterial pressure is converted to venous pressure achieving control of bleeding. The reported success rate of this procedure is 40-100% [7] mainly because ligation is done at a later stage where tissue edema and hematoma formation occurs [8]. We analyse the case sheets of the patients who underwent Internal Iliac Artery Ligation (IIAL) in our medical college over a period of 1 year to know the effect

of Internal Iliac Artery Ligation in Postpartum Haemorrhage management.

Materials , Methods & Data Collection

This study was done in Thoothukudi Medical College Hospital from Jan 2015 – Dec 2015. Total number of deliveries during this period is 4572 of this 43 patients developed Postpartum Haemorrhage. The incidence of Postpartum Haemorrhage in our institute is 0.9%. Totally 13 patients underwent Internal Iliac Artery Ligation, 8 patients underwent hysterectomy, 6 patients were treated with Blynch sutures, 4 patients were treated with step wise devascularisation of uterus and 12 patients recovered with medical management. Retrospective analysis of all case sheets of the patients who underwent internal iliac artery ligation was done. In the 13 patients, 8 patients had atonic Postpartum Haemorrhage of this 3 after vaginal delivery and 5 after cesarean section. All these patients were between 19 – 23 years. As all medical measures for controlling Postpartum Haemorrhage failed they were taken up for Internal Iliac Artery Ligation. Two Primigravida & One Multigravida patients were referred from peripheral centre with Rupture uterus for them Internal Iliac Artery Ligation followed by uterine rent repair was done. Two patients had central placenta previa as the bleeding from the placental bed was not controlled they underwent Internal Iliac Artery Ligation.

In all these patients Internal Iliac Artery Ligation was done in semi lithotomy position as vaginal bleeding could be arrested per operatively. A pfannenstiel incision was made and the uterus was pulled out, ureters were identified at the level of brim of pelvis, peritoneal incision was made parallel and lateral to the ureter and the ureter was medially retracted retro peritoneum was reached and the IIA was identified and ligated, the same was repeated on the opposite side. External iliac artery, femoral artery and dorsalis pedis arteries pulse were felt after the procedure.

Results

Internal Iliac Artery Ligation was performed in 13 patients over a year period from Jan 2015 to Dec 2015. In all these patients haemorrhage was controlled and vital signs improved after ligating the internal iliac arteries and there was no intraoperative and post operative complications and they were discharged in good health. Success rate of Internal Iliac Artery Ligation in our institute is 100%. Especially in primipara, we conserve the uterus thereby future fertility by this conservative surgical procedure. There was no maternal death due to PPH in our institution during the study.

Discussion

Postpartum Haemorrhage can cause maternal death if there is delay in surgical management once conservative measures failed. Internal Iliac Artery Ligation is a life saving and effective procedure in controlling Postpartum Haemorrhage. Nowadays it is not performed often due to fear of injury to iliac veins and also due to the availability of various other methods like uterine brace suture application, stepwise devascularisation and uterine artery embolisation. Though successful control of haemorrhage has been reported with B-lynch Brace suture. Delayed ischemic necrosis of myometrium was reported recently and also it is not useful in central placenta previa [9]. Stepwise devascularization of uterus though successful in controlling haemorrhage following the procedure uterine ischaemia formation, premature ovarian failure and secondary amenorrhea has been reported [10]. Uterine Artery embolization though effective is not available in most of the places. Kelly [11] performed Internal Iliac Artery Ligation with 95% success rate, 83.3% success rate with Internal Iliac Artery Ligation was reported by Mukherjee et al [12].

In our study we were able to control bleeding in all 13 cases with the success rate of 100%. We noticed that once haemorrhage has controlled after Internal Iliac Artery Ligation it has not recurred in any cases during the post operative period where the uterus was preserved. Internal Iliac Artery Ligation will not affect future reproductive function. Wagarachi and Fernando reported 50% pregnancy rate following Internal Iliac Artery Ligation [13].

Conclusion

In Conclusion Internal Iliac Artery Ligation, is an effective, safe and valuable method in Postpartum Haemorrhage management. It can be used for all causes of Postpartum Haemorrhage.

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