

Novel Technique for Cesarean Hysterectomy for Placenta Accreta - A Review

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Abstract

The incidences of placenta accreta are rising rapidly and at present Cesarean hysterectomy is the only accepted method for management. Because of neovascularisation and placental invasion there is always a risk of severe life threatening intraoperative hemorrhage during dissection of bladder flap. In spite of well planned multidisciplinary approach the morbidity is still very high. To overcome these complications many surgeons have tried with newer techniques of cesarean hysterectomy. The aim of this review to find out the novel and newer method of cesarean hysterectomy.

Keywords: Placenta accreta; Cesarean Hysterectomy; Fundal Incision; Retrograde Hysterectomy

Introduction

Placenta accreta (PA) is an obstetrician's nightmare [1] because of massive life threatening hemorrhage and cesarean hysterectomy (CH) is the only recommended resort in such circumstances to save a woman's life. The incidence of placenta accrete is rising rapidly because of rising cesarean delivery rate. As per American College of Obstetricians and Gynecologists (ACOG) the incidence of placenta accreta was 1 in 533 deliveries in 2012 [2,3]. Apart from maternal mortality, life threatening hemorrhage may cause significant morbidity like renal failure, DIC, sepsis, complications due to massive blood transfusion, bladder and ureteric injuries. Almost 90 % of the patients requires blood transfusion and among them 40 % need massive transfusion i.e. more than 10 units [2]. Tan et al. had reported a very high maternal morbidity with almost 2/3 of patient required blood transfusion for CH [4]. In a study by Washecka et al there were around 70% of patients who had urological complications

including bladder lacerations, urinary fistula, hematuria, ureteral transection and small bladder capacity [5]. In another review also the mortality was high, ranged from 0 to 12.5% with a mean of 4.8% and morbidity from 26.5 to 31.5% [6]. So in spite of proper planning with availability multidisciplinary team and adequate blood products, the morbidity is still very high.

Background

The aim of this review is to find out the novel and newer technique of cesarean hysterectomy for placenta accreta. Although the multidisciplinary approach is the main stay of management of placenta accrete but surgeon's skill as well as the technique also has a role to play. So there is a need to evolve a novel technique with standard steps which would help to minimize the morbidity due to excessive blood loss and bladder injuries. This review was done by searching articles on

'techniques of cesarean hysterectomy', 'fundal incision and retrograde hysterectomy' and their cross references

Skin Incision

The choice of incision depends upon history of previous surgery and body habitus. In a diagnosed case of placenta accrete where CH is being planned midline vertical incision is preferred because of sufficient exposure and can be extended above umbilicus if required in case of fundal uterine incision. Sometimes pfannenstiell or low transverse may need to convert to inverted T shaped in cases where placenta accreta diagnosed intra-operatively. As compared to midline vertical or transverse incision, inverted T shape is difficult to close, delayed healing and more painful. In case of previous tranverse scar few surgeon preferred transverse incision and in such situation pfannensteil incision can be converted to Cherneys or Maylard incision for adequate exposure.

Uterine Incision

Uterine incision can be lower segment transverse incision, conventional vertical (classical cesarean) or fundal incision. In few studies incision was also given under USG guidance after placental mapping. In vertical incision there is a risk of severe hemorrhage due iatrogenic partial separation of placenta. In latest studies fundal incision is being preferred over all others. Fundal incision is approximately 8-10 cms given over the anterior or posterior aspect of fundus. This incision avoids placental incision and allows direct visualization of placental separation. Kotsuzi et al. [7] has performed 34 cesarean in cases of anterior placenta praevia with fundal uterine incision and found a favorable outcome. Among them in 15 patients underwent CH for placenta accreta without any attempt to remove the placenta. There was no mortality or intensive care unit (ICU) admissions. Among all these patients one woman had subsequent uncomplicated pregnancy and had a cesarean at 34 weeks of gestation. But there are no studies on safety of fundal incision in subsequent pregnancy in patients who did not underwent CH. In Palacios Jaraquemada et al. [8] had reported uterine repair in cases of anterior placenta accrete in which fundal hysterotomy was done in 19 women. Out of these, ten women had subsequent uncomplicated pregnancies and underwent elective cesarean before the onset of labour [8].

Type of Hysterectomy

Different studies have tried to evolve the technique of CH so that the massive intraoperative hemorrhage could be managed in a best way without injuring adjacent organs. As per ACOG hysterectomy to be performed in usual steps and bladder to be separated relatively later after uterine vessels ligation to minimize the bleeding [2]. But practically bleeding is rapid, massive and life threatening during separation of bladder flap due to abundant engorged vessels and very difficult to achieve hemostasis and complete hysterectomy. In such situation there is more chance of injury to adjacent organs. This massive bleed further leads to other complications like DIC, renal injury and massive transfusions and transfusion related complications. To overcome these complications of massive hemorrhage during bladders separation and urological complications many authors have tried with different techniques like retrograde hysterectomy, posterior approach hysterectomy [9] or retrovesical lower uterine segment bypass hysterectomy [10]. Few authors have also evolve few extra steps in conventional hysterectomy like retrograde filling of bladder with saline or diluted methylene blue and prophylactic ureteric stenting to prevent iatrogenic injury.

Selman et al had an experience of retrograde hysterectomy in eleven patients with placenta accreta and had favourable outcome [11]. The technique was based on radical retrograde hysterectomy done for ovarian cytoreductive surgeries. In this technique cesarean was done with fundal incision and hysterectomy was done after opening the pouch of Douglas with the help of sponge stick. They also had done the devascularization with the ligation of anterior division of internal iliac artery and ureteric dissection to prevent injury. There were no intrapartum and postpartum complications and only two patients requiring blood transfusion.

Hiroshi et al. [12] has also done modified retrograde hysterectomy in four patients. They also deliver baby with fundal incision only. In addition they took some extra measures like bilateral ureteric catheterization under cystoscopy guidance, vessel tapes around bilateral internal iliac arteries and bladder distension with 300ml of diluted methylene blue. Out of those four patients only one required allogenic transfusion of 720 ml, rests were managed with autologous blood and there were no intra-operative complications.

Matsubara S, et al. [13] has also described eight universally achievable measures for CH for placenta accreta. They also preferred fundal uterine incision, retrograde bladder filling and placement of ureteric as well as intra iliac arterial occlusion balloon catheters. In addition they also emphasize over holding the cervical lips with sponge holding forceps which helps in taking lateral clamps at vaginal angle and also prevent any blood loss through vagina which might go unnoticed during the surgery.

Many authors have experience with conservative fertility sparing surgeries in placenta accreta. Palacios-Jaraquemada et al. [8] has developed one step conservative surgery for placenta accrete. In this technique before proceeding for hysterotomy ligation of all newly formed vessels was done followed by dissection of bladder flap. Uterine incision is above the placental margin and entire placenta with invaded myometrium was in one surgical piece. Uterine reconstruction was done with approximating healthy tissue and if defect is large they had to perform CH.

Conclusion

The incidences of placenta accreta are rising due to increasing cesarean rates. To prevent the complications due to accreta one option is to wisely take the decision for primary cesarean and second is to improve skills with a novel technique to manage cases of placenta accrete effectively. Although we have many new techniques for CH to reduce the morbidity but there is need to perform more analytical studies on significant numbers of patients to confirm the effectiveness of one technique over other.

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