



Management of Case of Postpartum Haemorrhage with Severe Anaemia (Hb- 1.4 gm) with Massive Transfusion Protocol (MTP)

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Abstract

22 year old P1L1 on postnatal day 1 of outside vaginal delivery brought by relatives to emergency room with reference of postpartum haemorrhage from private hospital. On examination her general condition was poor with severe pallor (+++++) and tachycardia (pulse rate 144/min), uterus was atonic while local examination revealed presence of cervical tear. Relatives were counselled regarding the prognosis, Senior obstetrician & anaesthetist were informed. Immediate resuscitation started and patient shifted for exploration. 2 PCV transfusion started immediately with O Negative blood bags and blood bank personnels were informed for massive transfusion protocol.

On investigations patient's haemoglobin came out as 1.4 gm %, WBC count 10,000 with platelet count of 77,000. Medical management started with injection Pitocin, injection carboprost and tab misoprostol 200 miligram kept per rectally & simultaneously vaginal exploration done. Intraoperatively cervical tear repair done, but due to persistent bleeding and uterine atonicity (despite repeating medical management and trying compression sutures) decision of obstetric hysterectomy was taken. Massive transfusion protocol was started. Total transfusion – 10 PRBC, 8 PRP, 12 FFP was given. Patient monitored in ICU in postoperative period. Patient extubated and had uneventful recovery.

Keywords: NIL

Introduction

Case Report:

22year old P1L1 with postnatal day1 of outside delivery brought by relatives to labour room with referral of postpartum haemorrhage and cervical tear. Patient had delivered vaginally in a private hospital 2 hours back, it was full term vaginal delivery with episiotomy and with birth of male child weighing 3.1 kg. History of prolonged labour with difficult delivery was present. Delivery to reporting time (to our institute) was 3.5 hours.

On examination patient was drowsy, disoriented. Pallor++++ with no edema or icterus.

Her pulse rate was 144/min with blood pressure of 70 mmHg systolic and respiratory rate 32-34 cycles per minute. Per abdomen examination revealed atonic uterus and active bleeding was noted from episiotomy site as well as from left cervical lip.

Immediate resuscitation was started & investigations were sent. Report of complete hemogram was Hb- 1.4gm, WBC- 10,000 /uL platelet count-77,000 /uL, MCV- 68.7 fL, HCT-4.3 % with B +ve blood group. Prothrombin time was 20.1 with INR 1.55 (control - 13)

Relatives were counselled regarding the guarded prognosis and patient attended by senior obstetrician and anaesthetists. Ot and Blood bank personnel and senior pathologist were informed regarding need of transfusion protocol (Massive Transfusion protocol).

Simultaneous resuscitation started and patient shifted for emergency vaginal exploration. Uterotonics administered, along with uterine massage, Medical management continued with injection Pitocin, injection carboprost and tab misoprostol 1000 microgram kept per rectally. Massive transfusion protocol initiated.

Repair of cervical tear done under general anaesthesia and 2 units of O negative (universal donor) PCV transfusion done while B positive bags were crossmatched.

Medical management of PPH repeated. Due to persistent atonicity abdominal exploration done and compression sutures (B-Lynch) taken and ligation of bilateral internal iliac arteries was done. Decision of obstetric hysterectomy(OH) was taken due to persistent atonicity of uterus. Abdominal drain kept in pouch of Douglas.

- Admission to OH interval- 1.5 hour
- Total transfusion – 10 PRBC, 8 PRP, 12 FFP

Patient shifted to ICU in postoperative period and started on higher antibiotics. Patient extubated after 48 hours and had uneventful recovery and postpartum period was uneventful.

Patient observed in ICU for 5 days and shifted to wards thereafter.

Figure 1- B-Lynch sutures

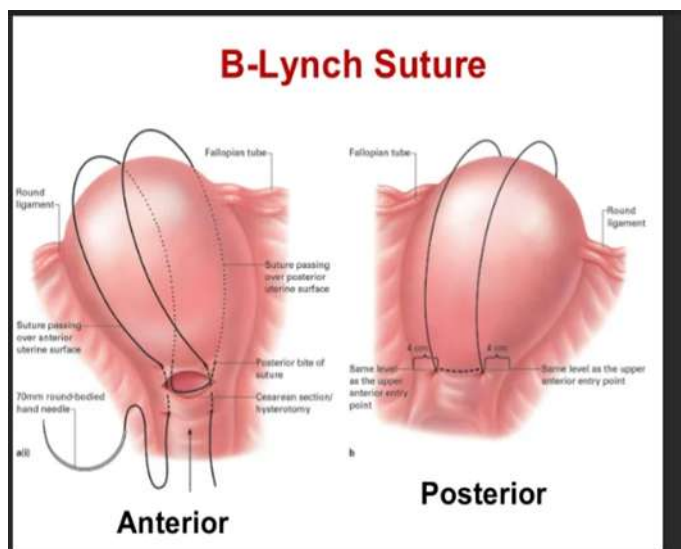
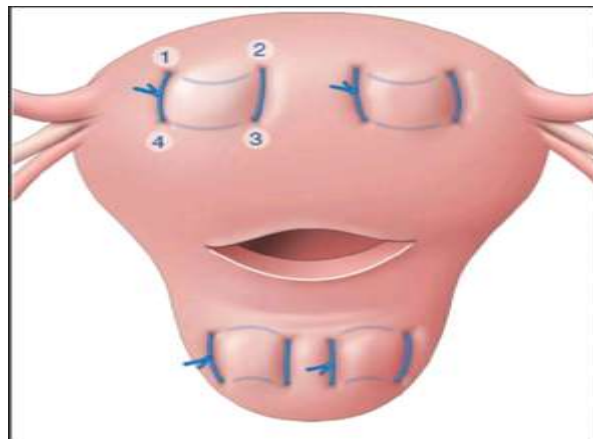


Figure 2- Cho sutures (Compression sutures)



Discussion-

Massive transfusion protocol (MTP) is vital component of blood loss management. Transfusion is said to massive when replacement of entire blood volume is done within 24 hr or atleast 50% total blood volume is replaced in 3 hour or Transfusion of >10 units PRBC in 24 hour or >4 units PRBC is done in 1 hour.

In this the ratio of PRBC:FFP:platelet unit is ideally 1:1:1 or 2:1:1

-early recognition & initiation of MTP is important.

-Blood collection should be done before starting colloids.

Principles of Massive transfusion protocol-

- Systolic BP- 80-100mmhg with MAP 60mmhg
- Hb- 7-9 gm/dl
- INR<1.5
- Fibrinogen >1.5-2
- Platelets >50,000
- pH 7.3-7.4
- Core temp >35 c

Complications of Massive transfusion-

- Dilutional coagulopathy
- Hyperkalemia
- Hypothermia
- Acidosis

- TRALI (Transfusion Related Acute Lung Injury)

Postpartum hemorrhage (PPH) is blood loss exceeding 500 mL after vaginal delivery and 1000 mL after caesarean section or blood loss causing hemodynamic instability in patient requiring blood transfusion.

PPH is classified as primary i.e. occurring within 24 hours of birth or secondary i.e. occurring more than 24 hours post-delivery till 12 weeks postpartum.

Common etiology of PPH include uterine atony, traumatic causes like cervical or vaginal lacerations, rupture uterus, retained placental bits or membranes and disorders of coagulopathy. High risk factors for development of PPH are prolonged labour, polyhydramnios, multiple gestation, precipitate labour. Simultaneous resuscitation and management should be performed in all cases of PPH. Monitoring vitals, urine output, IV fluids, O₂ by mask is of utmost importance. Active management of third stage of labour should be performed in all deliveries.

- Interventions to treat PPH generally proceed from less to more invasive and include compression techniques, medical management with uterotonics and surgical management. PPH management also involve adjunctive therapies, such as blood and fluid replacement and/or an anti-shock garment.
- Conservative management techniques- uterotonics such as injection oxytocin 20 IU im/iv given, injection methergine 0.5 mg im, injection PGf_{2a} 250ug im along with tab misoprostol 1000 mg per rectally and bimanual

compression are generally used as “first-line” treatments. Medical management was repeated. Retained placenta/products of conception should be ruled out on per vaginal examination. Aortic compression is another compression technique that has been used for severe PPH.

Medical methods include administration of uterotonics

- Pitocin (10-20 iu in 1000ml RL or NS)
- Methyl-ergometrine (0.2mg im/iv)
- Prostaglandins (carboprost, pgE2)

Volume replacement

- Crystalloids
- Blood products (PCV, FFP, PRP)

Mechanical methods- Bakri balloon, Shivkar pack, condom catheter, suction cannula are effective way of controlling blood loss and also should be done before transfer of patient to higher centre.

- Uterine packing

- Shivkars pack
- Backery balloon
- Foleys catheter/ condom catheter

Surgical management

Compression sutures such as B-lynch sutures, Cho sutures, Hayman sutures are taken in cases of atonic uterus. Internal iliac artery ligation is next step of management before proceeding for obstetric hysterectomy.

Conclusion-

- Avoid communication gap or Always call for Help.
- Multidisciplinary approach is of utmost importance, senior obstetrician and anaesthesiologist must be informed.
- Early recognition of high risk cases that can land up in PPH
- Timely referral to higher centre
- Basic resuscitation & primary management should be promptly done.