

Uterine Artery Embolization in the management of Morbidly Adherent Placenta (MAP), A Retrospective Study

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BACKGROUND:

Morbidly adherent placenta (MAP) is a defined as an abnormal implantation of the placenta into the uterine wall layers. [2] It can be subdivided into placenta accrete, increta, precreta depending on the depth of placental tissue invasiveness into the uterine wall. [1] Recent studies have reported an incidence as high as 1 in 533 pregnancies. [2]

MAP considers one of the leading causes of obstetric maternal morbidity as it's commonly associated with major maternal hemorrhage and cesarean hysterectomy. Recent large study series have reported lower rates of maternal death and this is likely to be due to the improvement of the antepartum screening and diagnosis of MAP and the advance planning of the delivery with optimization of surgical management in specialized centers by multidisciplinary team. [1][7]

METHODS:

Medical records of all patients with morbidly adherent placenta who had intraoperative uterine artery embolization in Al-Ain hospital between March 2015 and August 2018. Thirty-one patients aged 22 - 44 years were included in the Study. Measured outcomes included the following:

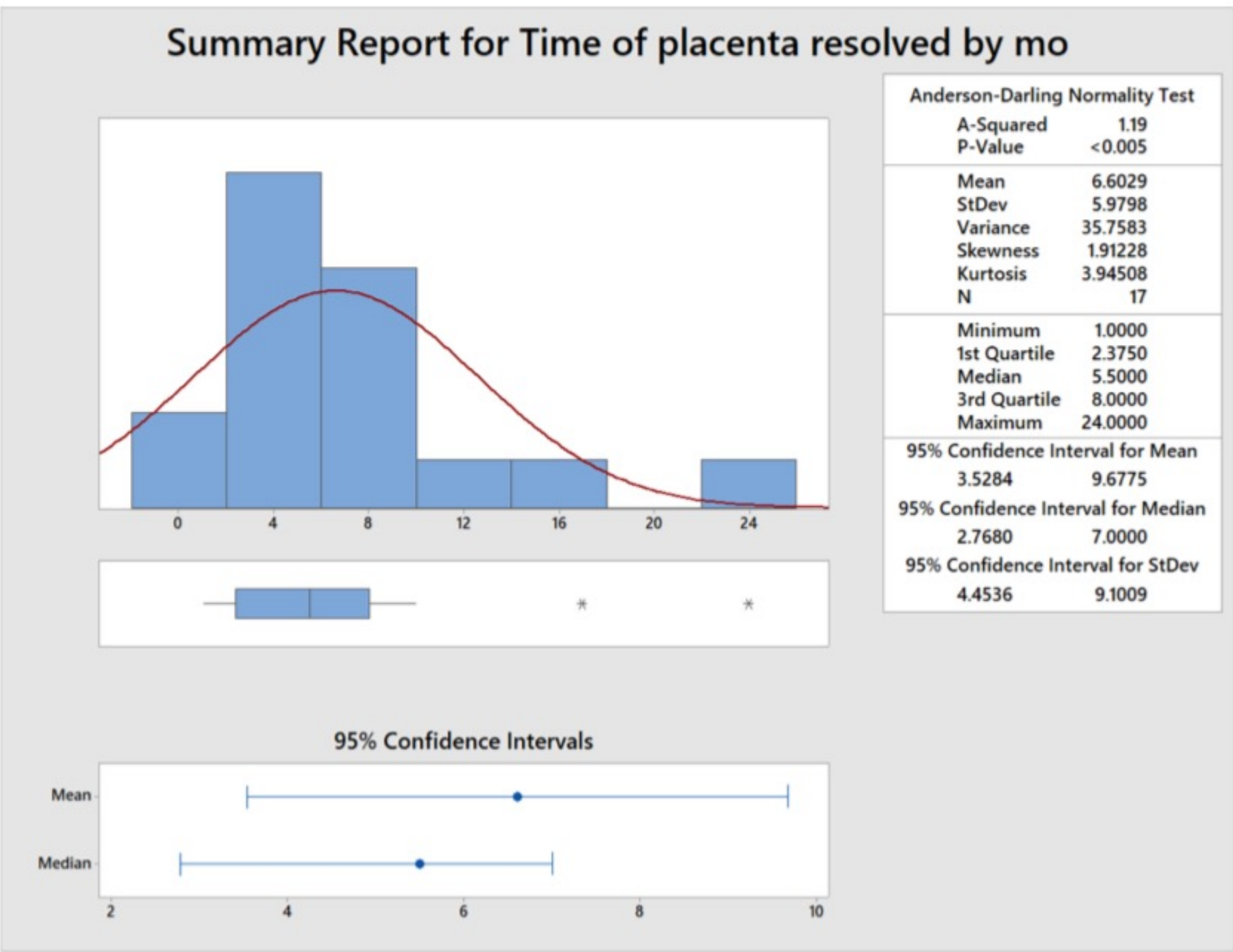
- Intraoperative blood loss
- Transfusion requirement
- Bulk of the placenta left in the uterus
- Match between the diagnosis of placental localization by ultrasound and intraoperatively
- Intensive Care Unit (ICU) admission
- Hospital length of stay
- Duration of placenta tissue resolve
- Postoperative complication (Secondary PPH, Hysterectomy, Follow up)
- Maternal mortality rate

Fetomaternal specialized doctors followed up patients with retained placenta using ultrasound and measured the time to resolve. Data were analyzed using Minitab.

RESULTS & DISCUSSION:

Uterine artery embolization is considered as a good procedure to control primary PPH and, preserve the uterus in patients with morbidly adherent placenta. Patients with such conditions had been counseled antenatally about the option of uterus preservation versus hysterectomy. All our patients opted for the option of uterine preservation by leaving the placenta behind after baby delivery.

One of the primary outcomes of our study was to estimate the time taken for the placental tissues to be resolved, which showed to be within an average of 6.6 months, which is considered acceptable in case women desire to preserve their uterus compared with the other treatment option like hysterectomy. The success rate of uterine preservation after UAE is 87.1% (27 patients). A recent systematic review showed that uterus preserving surgery is associated with a success rate of 48/76 women (63.2%). [26]



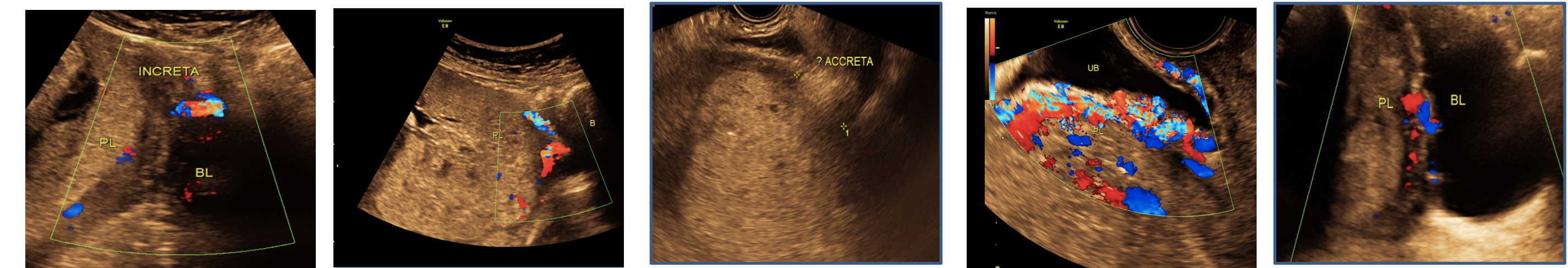
one patient (3.2%) required hysteroscopic resection of retained product of concepts (RPOC) after 3 months of conservative management in view of persist moderate vaginal bleeding. A recent study, 2015, reported the effectiveness and the safety of hysteroscopic resection of RPOC after conservative management of retained placenta accrete, in preventing major complications and to preserve future fertility. [27]

No mortality has been reported or encountered in the PPH group who underwent UAE. This consider as a good outcome in current thesis, compare to previous two published systematic review, where one reported a maternal mortality of 4% and the other reported maternal mortality of 3.4% following UAE or conservative surgical interventions for abnormally invasive placenta. [28]

RESULTS & DISCUSSION:

Our hysterectomy rate was 13.3% after uterine artery embolization, which is considered close comparing to systematic reviews reporting a success rate of 11.3%. [19] A systematic review reported success rates of 159/177 (89.8%) for arterial embolization, with secondary hysterectomy being necessary in 20/177 (11.3%). [18] On the other hand, our results represented a good outcome for uterine preservation compare to a 2017 systematic review and meta-analysis on the diagnosis and outcome of placenta accreta, where an elective or emergency caesarean hysterectomy without UAE was performed in 208 out of 232 (89.7%) cases. [29]

Ultrasound considered to be an effective way in predicting the placenta localization and invasion into uterine wall to the bladder, where it is used preoperative, and results from this showed a match of 41.9% (13 patients) were we able to match with intraoperative findings. 71% of the diagnosed placenta were accreta. A systematic review and meta-analysis of 23 ultrasound studies including 3707 pregnancies at risk of MAP found that the among the different ultrasound signs, abnormality of the uterus–bladder interface had the best specificity of 99.75% (95% CI 99.5–99.9) for the prediction of placenta accreta. [30]



The average estimated blood loss was 1.97L 95% CI (1.54, 2.41). On average 3 units RBC required with 2 units FFP.

32.3% (10 patients) required ICU admission due to major blood loss, on average a patient stayed 1.9 days.

Furthermore, 6.45% (2 patients) experienced post UAE complications. One patient developed left lower limb ischemia which was treated with intra-arterially anticoagulant agent. The other patient had left leg numbness and weakness due to nerve compression by intramuscular collection after arterial catheterization, treated with physiotherapy for two months.

STUDY LIMITATION:

One of the limitations of our study was the loss of long-term follow-up of 20 patients (64.5%) after treatment, and this prevented us from evaluating the long-term outcomes such as future fertility.

CONCLUSION:

Intraoperative Uterine Artery Embolization is an effective tool in the management of patients with morbidly adherent placenta, and this showed to decrease the amount of blood loss, the requirement of blood transfusion and hysterectomy rate, allowing women to preserve their future fertility keep the potential of having a larger family.

REFERENCES:

