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CASE REPORT

Bombay Blood Group in a Case of Previous Cesarean Section with Placenta Previa: Awareness, Alertness, Anticipation of Complications and Active Intervention (4As)

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ABSTRACT

H-deficient Bombay phenotype is rare since it occurs in about 1 in 10,000 individuals in India and 1 per 1,000,000 in Europe. Here is a rare case of a 30 years old G2P1L1 at 32 weeks with previous lower segment cesarean section (LSCS), intrauterine growth retardation (IUGR) and Doppler changes with also placenta previa. Her blood grouping was identified as Bombay blood group who underwent uterine artery embolization (UAE) with C-section. We present this case as the diagnosis of Bombay blood group can easily be missed and undiagnosed transfusion can cause serious complications.

Keywords: Bombay blood group, Cesarean section, Placenta previa.

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CASE REPORT

A 30-year-old 2nd gravida at 32 weeks+ with previous lower segment cesarean section (LSCS), with intrauterine growth retardation (IUGR) and Doppler changes perceives fetal movements well, and no other complaints.

First Pregnancy

In 2009 at Odisha, emergency cesarean section for failed induction boy 3.2 kg (no complications), patient's blood group was diagnosed as O positive.

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EXAMINATION

Vitals stable, per abdomen: uterus—28 weeks, relaxed; fetal heart rate good, pfannenstiel scar healthy and steroids were covered. Scan showed IUGR 1.2 kg baby with Doppler changes with grade 2 placenta previa. Blood grouping came as Bombay blood group. One donor from all over Chennai came forwarded to help. Patient was taken for uterine artery embolization (UAE) (Fig. 1) with LSCS in our catheterization lab (Fig. 2). Sterilization was also done. Postoperative 1 unit was transfused. And, both baby and mother got discharged on postoperative day 10 successfully.

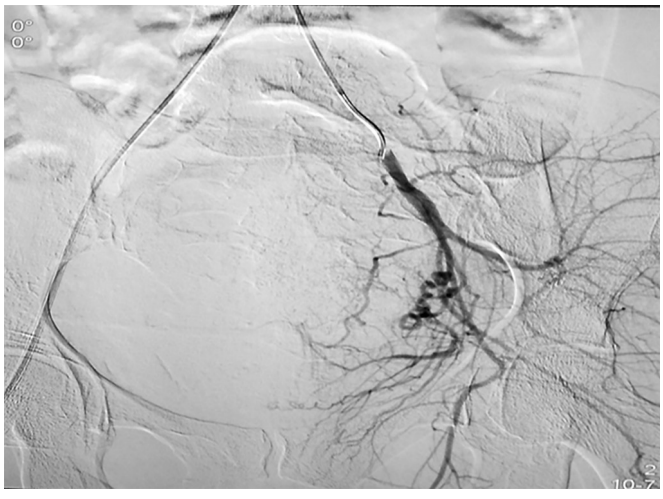

Fig. 1: Uterine artery embolization

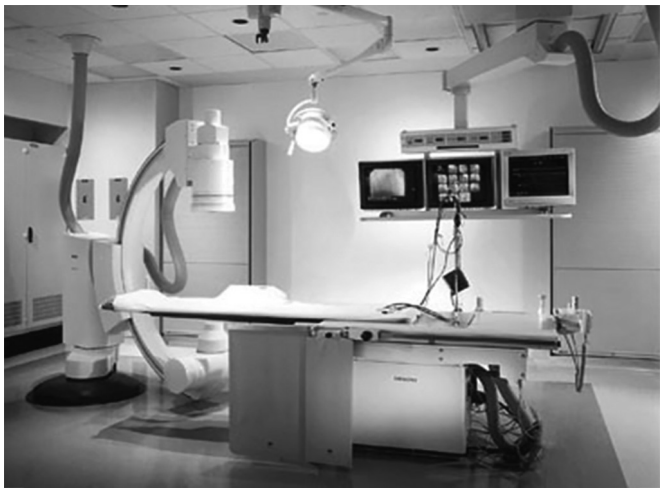

Fig. 2: Catheterization lab

DISCUSSION

The blood group serology plays an important role in transfusion medicine. The discovery of a rare blood group, Bombay (OH) phenotype by Bhende et al in 1952 in Mumbai formerly (Bombay) was important in the field of immunohematology. The discovery later helped Watkins and Morgan[1] (1959) and Gerard et al[2] (1982) to elucidate biosynthetic pathway for ABH and Lewis (Le) antigens suggesting the secretor (Se) and (H) are closely linked structural genes. Recently, molecular genetic studies were carried out to determine the role of the H, Se and Le genes in the expression of H antigen in secretions and Lewis blood group antigen on erythrocytes.[3-5]

It is known that the precursor protein from which all blood groups are formed is termed as the 'H' antigen. This 'H' antigen either translates into 'A' antigen (blood group A) or into 'B' antigen (blood group B) or into both A and B antigens (blood group AB) or it remains as 'H' (blood group 'O'). In the case of Bombay blood group, there is absence of 'H' antigen itself. Therefore 'A', 'B', 'AB' and 'O' which are all different manifestations of 'H' are alien to persons with Bombay blood group. The Bombay blood group is termed 'OH' meaning absence of 'H' antigen.

CONCLUSION

Detection of Bombay blood group requires proper blood grouping and cross matching of the blood samples. This group would be categorized as the 'O' group as it does not show any reaction to anti-A and anti-B antibodies just like normal 'O' group. When crossmatching with 'O' group is done, then it would show cross-reactivity or incompatibility. Therefore, reverse grouping or serum grouping has to be done to detect this group.

As the Bombay blood group is a rare blood group, it is desirable to develop cryopreservation facilities for rare blood donor units. Every blood bank should maintain a rare blood type donor file with the help of emergency obstetric care (EMOC) services so as to arrange blood in times of obstetric need and prevent maternal mortality.

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