THE ROLE OF ULTRASONOGRAPHY IN ANTEPARTUM HAEMORRHAGE

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SUMMARY

One hundred and fifty consecutive cases of third trimester bleeding had an ultrasonographic examination within 24 hours of hospital admission, with a view to identify the cause of haemorrhage. Fortyeight (32%) cases were found to have placenta previa. Our accuracy rate for placental localisation was 94.7%. In 7 (4.7%) cases, a retroplacental haematoma suggestive of abruptio placentae was seen. In the majority i.e. in 95 (63.3%) cases no cause of haemorrhage was identified. A per speculum examination was done in all patients, but no lesion that could have caused the bleeding could be identified. A tentative diagnosis of Rupture of a Marginal Sinus was made in this group of cases. Spontaneous onset of labour occurred within 48 hours in 33 (34.7%) of these patients. Of these 20 (60.1%) had a preterm delivery.

The accuracy and diagnostic pitfalls of ultrasonography in antepartum haemorrhage is also discussed.

Introduction

Bleeding in the third trimester occurs in 2 to 4% of all pregnancies. Only in a small percentage of these cases is the initial episode severe enough to necessitate immediate therapeutic measures. In most cases on subsidence of the bleeding, investigations must be done to try and pinpoint the cause of the haemorrhage. The most important aim of these investigations is localisation of the placenta Ultrasonography is the simplest, most accurate, non-invasive method of placental localisation and has totally replaced amniography, soft tissue radiography and radionuclide studies.

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Materials and Methods

On 150 consecutive cases of antepartum haemorrhage at the Nowrosjee Wadia Maternity Hospital, an ultrasonography examination was done. All the cases included for study had had a single episode of third trimester bleeding which was not serious enough to deserve immediate treatment and which decreased with bed rest in hospital and sedation. A per speculum examination was performed, with a view to find any local lesion that may have caused the bleeding. Within 24 hours of hospitalisation an ultrasonography was done by

the ultrasonologist in conjunction with the obstetrician. The equipment used was an A.T.L. and A.D.R. ultrasound scanner, model 4000/SL with a 3.5 mega Hz gray scale linear probe. All examinations were done with the patient's bladder being full. The entire placenta was carefully scanned to determine its location. A diagnosis of placenta previa was made when the major part of the placenta was lying in the lower one third of the uterus. The lower uterine segment was defined as the area below the line joining the symphysis pubis and the sacral promontory. When the placenta completely covered the internal os, it was considered to be a Central Placenta Previa. When the placenta extended into the lower uterine segment and only partly covered the internal os, it was considered to be a Partial Placenta Previa. To avoid a false positive diagnosis of placenta previa, all cases with a low lying placenta were examined again after emptying the bladder to reconfirm the relationship between the placenta and the cervical canal. In cases with a posterior or posterolateral placenta previa, the presenting part was elevated by abdominal palpation to permit better visualisation of the placenta. A distance of more than 1.5 cm between the fetal presenting part and the sacral promonotory made us suspicious of the possibility of a posterior placenta previa.

Besides localising the Placenta the presence of a retroplacental clot suggestive of Abruptio Placentae was looked for in all cases. A retroplacental haematoma was visualised as an echofree zone between the uterine wall and the placenta. As this clot got older and more organised, its echogenecity increased. All these patients were followed up till delivery. At delivery, either vaginal or abdominal, the placenta was carefully examined with respect to its location and the presence of retroplacental clots.

Results

At sonography, of the 150 cases, 102 (68%) were found to have a fundal placenta while the remaining 48 (32%) had a placenta previa. In 30 cases it was a partial Placenta Previa, 11 being anterior and 19 being posterior. While in 18 cases a diagnosis of complete placenta previa was made. After subsequent delivery it was found that of the 48 cases diagnosed to have a placenta previa, 3 had a fundal placenta. Thus the false positive rate was 6.25%. Of the 102 patients diagnosed to have a fundal placenta, 5 actually had a placenta previa. Hence the false negative rate was 4.9%. The error rate in our modest series was 5.3% with an accuracy rate of 94.7% for placental localisation.

In 7 (4.7%) cases a retroplacental clot suggestive of Abruptio Placentae was seen. Even after an ultrasonographic examination in only 55 cases could a cause for the antepartum haemorrhage be determined. In the majority of 95 (63.3%) cases, the cause of bleeding remained unknown. Rupture of a Marginal Sinus was the tentative diagnosis made in all these cases. Spontaneous onset of labour occurred within 48 hours in 33 (34.7%) cases of antepartum haemorrhage of undetermined cause. Of these 20 (60.1%) patients had a preterm labour.

Discussion

The accuracy rate of placental localisation using ultrasonography is 94% (Cambell and Kohorn, 1968) with a B-scan and 98.9% (Brown, 1975) with gray scale equipment. A false positive report is undesirable as it causes unnecessary patient inconvenience and anxiety but a false negative report is much more serious as it misses a potentially life threatening condi-

tion. The false negative rates using ultrasonography vary from 0 to 7%. But this is much better than that with older methods. The false negative rate was 5 to 13% with radioisotopic and 7 to 25% with soft tissue placentography. Common causes of diagnostic errors include bladder over distension, posterior positions of the placenta and failure to appreciate the peripatetic nature of the placenta and it's so called migration.

In cases of Abruptio Placenta care must be taken not to confuse the normal retroplacental myometrium and draining Placental veins with a haematoma. In cases of marginal sinus bleeding the blood clot adjacent to the placenta may mimic a retroplacental haematoma. Also at times the blood may dissect beneath the chorionic membrane causing a subchorionic haematoma resulting in an echofree collection beneath the chorionic plate on a sonographic scan. In some cases of abruptio placenta demonstration of a retroplacental haematoma may not be possible despite profuse external bleeding as there is no accumulation of blood within the uterus. Thus a normal scan does not rule out the possibility of Abruptio Placentae.

In the majority of cases no cause could be determined for the haemorrhage. A tentative diagnosis of Rupture of a Marginal Sinus was made. This condition can be accurately diagnosed after delivery by identifying a fixed thrombus within the ruptured vein continuous with an attached overlying clot at the placental margin. There is a strong association between Antepartum Haemorrhage of an undetermined cause and Preterm Labour.

Conclusion

In spite of its fallacies, ultrasonography remains the most important investigation in cases of Antepartum Haemorrhage.

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