Case Report

Ballantyne Syndrome in Rhesus Isoimmunised Pregnancy

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Introduction

Ballantyne syndrome or Mirror syndrome or triple edema syndrome is a rare and dangerous disorder affecting pregnant women. It describes unusual association of fetal and placental hydrops with maternal edema. It was first described in 1882 by John William Ballantyne. Awareness of the syndrome is important due to associated fetal and maternal risks [1]. We present a case of Ballantyne syndrome in Rhesus isoimmunised pregnancy with severe fetal hydrops.

Case Report

A 28 year old woman, Gravida 4, Para 3 Living 2 was referred from a peripheral hospital at 35 weeks of gestation with diagnosis of Rhesus (D) isoimmunised pregnancy. She had three full term vaginal deliveries with delivery of hydropic fetus in her last delivery two years back. Her blood group was AB negative. There was no history of taking anti D immunoglobulin in any of the pregnancies. Ultrasound examination at the time of admission revealed marked fetal hydrops with ascites (Fig. 1) and pleural and pericardial effusion with cardiomegaly (Fig. 2). Indirect Coombs' test titer was 1:256. Cordocentesis and intra uterine transfusion (IUT) was performed on the day of admission. Cordocentesis revealed haemoglobin of 2.9 g/dl and hematocrit of 7.8%. Post transfusion haemoglobin and hematocrit were 8.1 g/dl and 24.6% respectively. Second IUT was carried out on day four of admission with post transfusion haemoglobin of 11.2

g/dl. On day two of admission she developed marked edema over face, lower limbs and anterior abdominal wall together with slight rise in blood pressure (140/90 mm Hg). All her biochemical parameters were normal. About 12 hours after second IUT she went into spontaneous labour. Emergency caesarean section was performed for associated ascites, pleural and pericardial effusion. Maternal ascites was noted during caesarean section. Hydropic male fetus weighing 3010 gm was delivered (Fig. 3). Placenta weighed 2915 g and was pale and edematous with fluid oozing from it. New born was put on ventilator support, but couldn't maintain oxygen saturation and died on day two of life.

Discussion

Ballantyne syndrome or mirror syndrome or triple edema syndrome is a rare complication seen in pregnancy. It was first described in association with severe foeto-placental hydrops caused by rhesus immunization. The name 'Mirror syndrome' refers to similarity between maternal edema and foeto-placental hydrops. Ballantyne syndrome has several characteristics; edema is always a key feature, albuminuria usually mild and preeclampsia unusual. The exact pathophysiology of this rare disorder remains unclear. This syndrome may also be associated with a variety of obstetrical problems that may range from fetal hydrops caused by fetal congenital malformations [2-4], fetal infection e.g. by maternal-fetal parvovirus

Fig. 1 : Fetal hydrops with ascites.

Fig. 2 : Pleural and pericardial effusions with cardiomegaly.

Fig. 3 : Hydroptic fetus.

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infection and metabolic disorders. Some authors have suggested placental hypoxia as the main causative factor for this syndrome [5].

This serious complication occurs only if the placenta is grossly edematous as was seen in our case, while it is rare if the fluid accumulation is limited to the fetal body. It may be difficult to distinguish between Ballantyne syndrome and preeclampsia. Platelet count, aspartate transaminase, alanine transaminase and haptoglobin are usually not affected in this syndrome and this may be used to distinguish it from the hemolytic anemia, elevated liver enzyme and low platelet count (HELLP) syndrome. When the specific cause of fetal hydrops can be identified and corrected by in utero treatment, reversion of Ballantyne syndrome has been reported [6]. Total or partial reduction of the placental edema may be responsible for this reversion. When specific cause can not be identified or corrected, immediate delivery is necessary in order to avoid fetal death and maternal complications.

Conflicts of Interest

None identified

References

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Book Review

Atlas of Surgical Techniques for the Upper Gastrointestinal Tract and Small Bowel. Michael J R, Jeffrey R P. Publisher: Saunders Elsevier, 1600 John F Kennedy Blvd, Ste 1800 Philadelphia PA 19103-2899. Pages: 242; Price-US \$249. Hardbound, Year of Publication: 2010 First Edition. Illustrations: More than 300 colour. ISBN: 978-1-4160-5278-4.

Upper gastrointestinal surgeries, conventional as well as laparoscopic, are common operations undertaken by surgeons. Advances in laparoscopy and stapling techniques have changed the art, craft and extent of surgery and therefore atlases that include these are popular. Step-by-step including use of staplers and

laparoscopic approach to various surgeries is a useful feature. The authors have also examined likely causes of complications and have provided useful tips on avoidance of these pitfalls.

The book is useful for all surgical residents and surgeons dealing with gastrointestinal tract surgery. It bridges the gap between available atlases on conventional surgery and laparoscopic surgeries. Pre and post operative imaging is an added feature of the book. Access to full text online with procedural videos is an added advantage to the user.

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IAL Textbook of Leprosy. Kar HK, Kumar Bhushan. JAYPEE Brothers Medical Publication : 2010 First edition. Pages: 624. ISBN: 978-81-8448-8524.

A comprehensive text book on leprosy brought out by the Indian Association of leprologists at a time when there are apprehensions that the interest in leprosy as a clinical and scientific challenge is diminishing. It was a long felt need for revision of the existing books on the subject by Indian leprologist which has been fulfilled.

This multi author book with rich contribution from the renowned leprologists covering the entire gamut of epidemiology, pathology,

clinical aspects, management, social and legal aspects and rehabilitation is the most up-to-date collection of the material on the subject.

The book will serve as an important reference material to all clinicians, researchers and medical students and is a must for post graduates and libraries.

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