Fetal Reduction in Patient with Internal Jugular Vein Thrombosis following Ovarian Hyper Stimulation Syndrome (OHSS)

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Introduction

Thrombosis of the internal jugular vein is an uncommon entity with potential for serious consequences [1]. Majority of the reported cases of jugular venous thrombosis have occurred in the presence of an indwelling venous catheter, an established hyper-coagulable state, or in association with head and neck sepsis. We report a case in whom jugular venous thrombosis developed during the first trimester following Ovarian Hyper Stimulation Syndrome (OHSS) and quintuplet pregnancy. The presentation of severe neck pain in pregnant women, especially in those who have undergone assisted reproduction procedures and had OHSS, should prompt evaluation by duplex scan to evaluate the jugular veins for thrombosis. Fetal reduction should be considered in these high order pregnancies.

Case Report

A twenty six years old female with primary infertility underwent ovarian hyperstimulation with Human Menopausal Gonadotrophins and administration of 10,000 units of Human Chorionic Gonadotrophin. Six days after administration of Human Chorionic Gonadotrophin, she developed abdominal distension and progressive dyspnea. Abdominal ultrasound showed ascites and bilateral multicystic ovaries. She was treated with conservative management and albumin infusions. She had symptomatic improvement after four days. Ultrasound done at six weeks showed quintuplet pregnancy and bilateral cystic ovaries. During ninth week of her pregnancy she developed edema and pain in her right neck, pain in the subclavicular area and tingling sensation in right arm. A duplex scan revealed thrombosis of right internal jugular vein. She was managed with anticoagulant therapy LMWH (Low Molecular Weight Heparin) 60 mg subcutaneously twice a day. Pain and swelling

resolved after five days of treatment and dose of LMWH was changed to prophylactic doses of LMWH (60 mg per day) as patient started having bleeding per vaginum. Ultrasound showed quintuplet pregnancy with four viable fetuses of ten weeks gestation. After counselling couple opted for fetal reduction. Reduction to twin was done in two sittings by intracardiac potassium chloride (Fig. 1).

Discussion

Thromboembolic phenomena is uncommon yet grave consequences of assisted reproductive technology. Deep vein thrombosis is more common following ovarian hyperstimulation syndrome [2]. It has been suggested that the underlying hypercoagulable state characteristic of OHSS due to high serum levels of estrogen and haemoconcentration contributes to the development of DVT. Knowledge about its pathogenesis and prevention is limited [3]. While OHSS may be an important factor in the pathogenesis of thrombosis, it does not precede all cases [4]. It is interesting to note that the thrombosis often presents weeks after resolution of the clinical

Fig. 1 : Fetal reduction with intracardiac Kcl.

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syndrome, as was the case with our patient.

The incidence of thromboembolism is difficult to estimate because no systematic registration exists for OHSS cases or their complication. Approximate incidence reported is 0.08-0.11 % of treatment cycles in women undergoing assisted reproductive technologies [5].

Venous thromboembolism in pregnancy is most commonly located in the lower extremity with 70% occurring in the ileo-femoral region [6]. In contrast, majority of thrombosis following ovarian stimulation occur in the upper extremity. Therefore, it is likely that our patient's complication was related to OHSS rather than pregnancy alone. It is not clear why there is predilection for thrombosis in upper extremities. Most of the reported cases of jugular venous thrombosis have occurred in the presence of an indwelling venous catheter, an established hypercoagulable state, or in association with head and neck sepsis which was not present in our case. Some authors have reported a number of risk factors in relation to thrombotic phenomenon, including: low antithrombin III, decreased protein S activity, and factor V Leiden mutation [7].

This case demonstrates a serious and potentially fatal complication of assisted reproductive treatment. Early diagnosis and treatment is crucial for both maternal and fetal well-being. Obstetricians should be aware that patients may present with symptoms of upper extremity DVT weeks after OHSS symptoms have resolved. Pregnant patients complaining of neck pain and swelling should undergo a thorough and complete evaluation for upper extremity DVT. In addition, consideration must

be given to screening patients at risk for OHSS for thrombophilias as well as administering prophylactic heparin for patients who develop OHSS. Further clinical studies are required to elucidate the role of anticoagulation in patients with OHSS following ovulation induction. Fetal reduction is an option for multiple pregnancies of high order to reduce perinatal morbidity and mortality due to premature deliveries.

Conflicts of Interest

None identified.

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