

Learning Curve for Fetoscopic Laser Surgery for Severe Twin to Twin Transfusion Syndrome Can be Shortened

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Background:

Fetoscopic laser coagulation of placental anastomoses in severe twin to twin transfusion syndrome has been shown by randomised controlled trial to improve perinatal survival especially in the most severe cases. Until recently, this has only been available in a few centres worldwide, and the learning curve is expected to be long.

Objective:

To assess whether the learning curve for fetoscopic laser surgery could be shortened with the aid of telemedicine.

Methods:

The clinical teams in the expert site (Tampa, Florida) and novice site (Brisbane) met and agreed on a clinical protocol. The novice team visited the expert site and observed surgery over a two week period. A dedicated tele-link was set up between the novice site and the expert site. Live surgery performed at the expert site was transmitted and viewed by the Novice team over an 18 month period. The results of fetoscopic laser surgery at the novice site were compared to that reported in the literature.

Results:

The novice team has performed 58 fetoscopic laser surgeries to date. Results from the first 50 cases are reported here (11 in stage II, 26 stage III, and 13 stage IV disease at operation). The overall survival of babies is 84%. At least one baby survived in 92% of pregnancies, with both babies surviving in 76% of pregnancies. In a large report of 200 consecutive fetoscopic laser surgeries, the reported overall survival improved from 61% to 68% after 70 procedures, suggesting a long learning curve. Overall perinatal survival rate reported by some other recent series include: 65% from another novice site in Netherlands on 49 patients, and 56% in 72 patients treated with laser surgery from the randomised controlled trial in Europe. Our overall survival rate of 84% is significantly better than all of these reported series (p values range from <0.003 to <0.0001), suggesting that our learning curve has been significantly shortened.

Conclusions:

There may be many factors involved in shortening the learning curve for a new operative procedure. Telemedicine appeared to have assisted in this.

Reference:

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