

## **Introduction of Fetoscopic Laser Ablation Surgery for Twin to Twin Transfusion Syndrome in Scotland**

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**Background:** twin to twin transfusion syndrome (TTTS) affects up to 20% of Monochorionic twin. Abnormal blood vessel connections within the placenta may cause unequal blood flow between the twins. Without treatment the syndrome results in death of both twins in over 90% of pregnancies. Laser ablation of the shared placental vessels is performed under direct vision via a fetoscope. Treatment improves the chances of survival both twins surviving to 40%.

**Service Needs:** up until May 2014 any patient in Scotland who required laser treatment for TTS required to be transferred to either Birmingham women's Hospital(BWH) or London. This obviously involves considerable travel and expense and is not ideal for the patient. An Obstetrician with an interest in fetal medicine travelled to Birmingham over a period of approximately 18months to learn the procedure. Subsequently, all patients in Scotland now travel to the Southern General for treatment. It is expected that 12-18 patients a year in Scotland will require treatment.

**Anaesthesia for TTS:** a literature search of methods of anaesthesia for fetoscopic surgery and specifically TTS revealed a large variety of possible techniques: spinal, CSE, GA, midazolam, and remifentanil sedation. I therefore contacted BWH who perform approximately 100 laser treatments a year and was offered to travel down to observe the procedure. They perform the surgery using mainly spinal anaesthesia, with a block to T8, or remifentanil sedation with local anaesthetic infiltration in approximately 50:50 split.'Lasering' time is usually 20-40minutes. The choice is made mainly on Obstetric preference with the main benefit to the Obstetrician of a spinal being a guaranteed stationary patient. Remifentanil is preferred by the Obstetrician with the most experience of TTS with the perceived benefit of fast onset/offset and no setup time for a regional technique. The patients were pre-assessed the evening before and counselled on what to expect, which is of particular importance if using remifentanil.

**Story so far:** we have performed 4 laser treatments for TTS in Glasgow. It was decided to use a CSE technique initially to allow for a prolonged operating time. There has been a considerable learning curve for the theatre team with the 1<sup>st</sup> case lasting 4hr 30mins and the 4<sup>th</sup> case lasting 1hr 45mins total theatre time.

**Future issues:** currently there is no extra time/staff allocated for this service and the patients are listed on the elective CS list. However, there is a possibility that all patients from the North of England may come to Glasgow for treatment. If this occurred and the patient numbers increased extra resource may require to be allocated