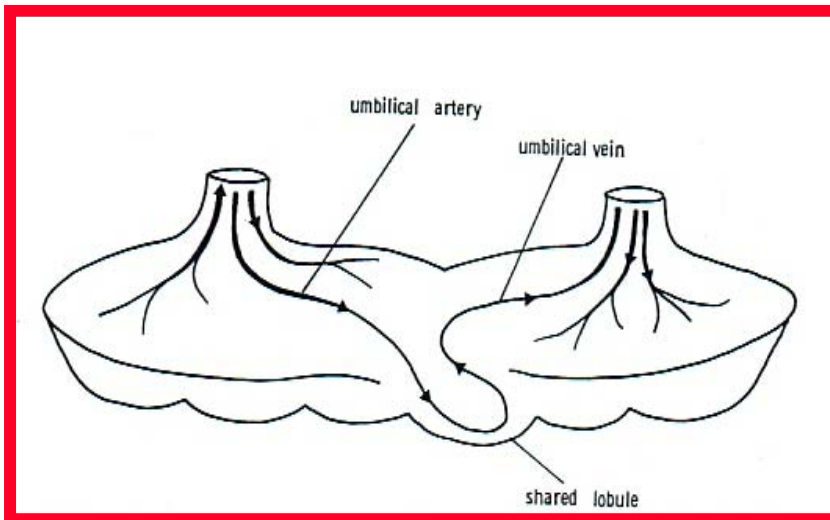


## Patient information sheet: Twin-twin transfusion syndrome:

### Introduction

Twin-twin transfusion syndrome (TTTS) complicates 1 in 5 (20%) of monochorionic (MC) twin pregnancies. In monochorionic twins (identical twins), the twin pregnancies 'share' the placenta (afterbirth) and there are often blood vessels within and on the surface of the placenta connecting both twins.



This is a very serious complication of multiple pregnancies and can present:

- a) In the first trimester with discordant nuchal translucencies (collection of fluid at the back of the baby's neck) in MC twins.
- b) With an excessive amount of amniotic fluid around one twin (recipient = receives a high perfusion of blood from the placenta) and a decreased amount of amniotic fluid around the other (donor = under perfusion of blood from the placenta).
- c) Differing sizes of twins.

Without treatment, this condition will lead to death or miscarriage in excess of 95% of these MC twin pregnancies. In addition this is a condition that can damage babies. Babies may have complications of poor blood supply that can cause 'strokes' and ischaemia (poor blood supply) of the limbs. It is thus, a serious problem effecting twins.

We treat approximately thirty to forty cases annually at the Fetal Medicine Centre at Birmingham Women's Hospital, predominantly by aggressive and serial amniodrainage (draining off large amounts of amniotic fluid at frequent intervals).

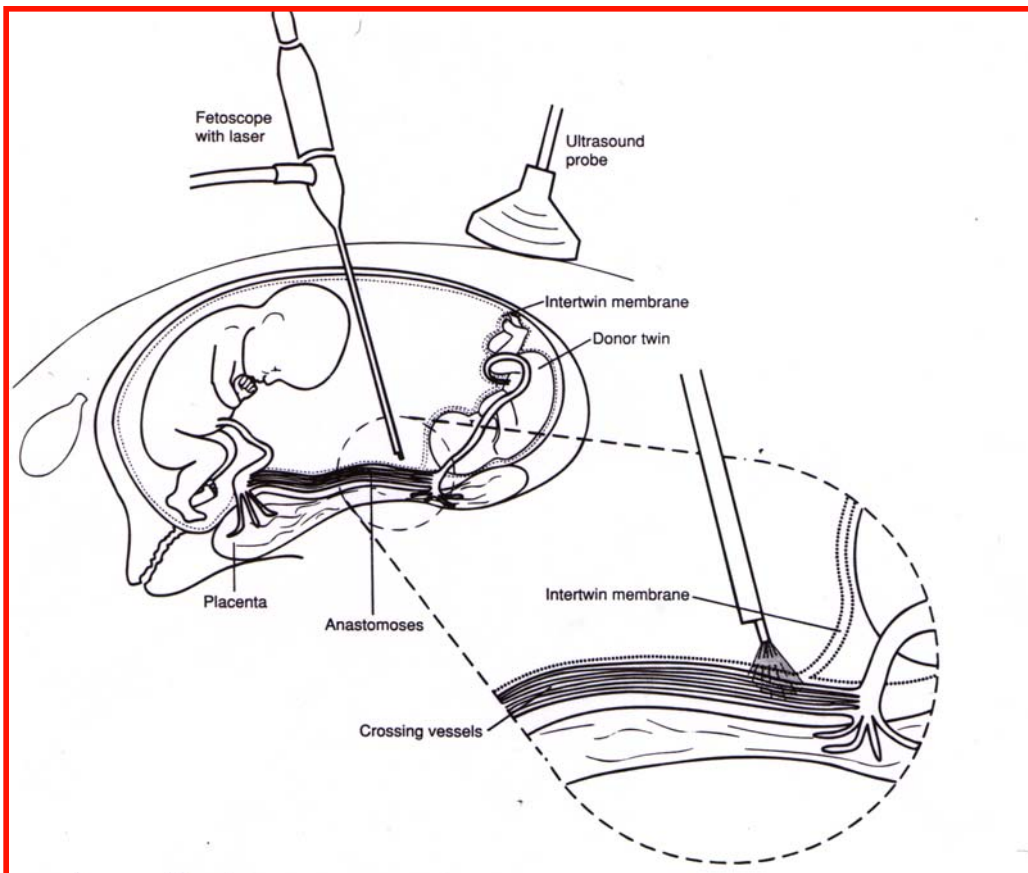
One of the consequences of this condition is the accumulation of a large amount of amniotic fluid surrounding one of fetus's in the uterus (womb). The patient usually presents at between 18-24 weeks with abdominal pain, contractions and occasionally vaginal bleeding and the diagnosis is confirmed by ultrasound scan.

There is a high risk of miscarriage, death soon after birth and chronic handicap (cerebral palsy) in survivors (1 in 5) due to poor placental function, abnormalities of fetal growth and risk of pre term delivery/miscarriage. Over the last ten years interest has focused upon both survival of babies with this condition, as well as the long-term handicap of survivors. This has led to the development of alternative management strategies of this condition with the goal of significantly reducing long-term handicap and damage in survivors.

The best treatment for TTTS is fetoscopic laser ablation:

### **Laser ablation of placental vessels**

A relatively recent development in the management of TTTS is the use of fetoscopy (special scope allowing the baby to be seen while still in the uterus) and laser to separate the placental blood vessels between the twins.



This procedure would usually be undertaken only once during the pregnancy (although occasionally it will need to be repeated) and amniodrainage is performed at the same time.

The treatment is carried out under local anaesthetic (epidural or local anaesthetic) with ultrasound visualisation throughout and a 2-3mm scope being passed directly and under ultrasound guidance into the amniotic cavity to allow visualisation of the superficial placental blood vessels.

A laser fibre is passed down an operating side arm and is then used to coagulate (block) the appropriate superficial blood vessels (on the surface of the placenta running from donor to recipient twins) and the excess amniotic fluid drained if necessary to do so. This treatment is undertaken between 16-24 weeks gestation depending on clinical findings.

In the largest randomized trial reported of this procedure 142 pregnancies were looked at. 72 of these pregnancies were allocated to laser treatment (therapy). 73% of these had at least one twin survive compared with 51.3% treated with amniodrainage. Of those pregnancies treated with laser there were 6.9% of deaths within the first week of life compared with 22.8% in those pregnancies treated with serial amniodrainage. At the age of one year neurological handicap was suspected in 4.2% of the surviving babies compared to 20% suspected in those babies who had been treated with amniodrainage.

In our own centre at BWH this has been the treatment of choice since 2004. We have performed 162 procedures and the data indicates that in 85% of cases there is one of two survivors. This will breakdown to possible outcomes of:

1. Two fetal losses: 15%.
2. Single fetal survivor in 45%.
3. Two fetal survivors in 40% of cases.

There is an increasing body of opinion that would advocate treatment of severe, early onset TTTS using fetoscopically directed laser ablation, as first resort. The rationale for this is not some much to increase fetal survival but to reduce the significant risk of cerebral palsy in the survivor(s) of this condition.

***The disadvantages and complications of this technique are:***

1. It would need to be performed in operating theatres under a local (spinal/epidural anaesthetic) and you would be monitored closely after the operation. The procedure takes approximately 30-60 minutes.
2. There is a risk of pre-labour ruptured membranes 5 -7% (waters breaking).
3. There is a small risk of bleeding into the amniotic fluid (bleeding within the womb/uterus).
4. If one twin were to not survive; careful monitoring would be required to decide on rescue transfusion of the surviving twin.

***The advantages are:***

1. The procedure only needs to be performed once in the majority of cases.
2. There are improved survival rates of at least one twin over compared with amnioreduction.
3. The risk of long term handicap in survivors appears to be significantly reduced.

**Diathermisation of the umbilical cord.**

This is performed when there is evidence that one of the monochorionic twins has advanced heart failure and is close to death. This often presents as 'fluid within the body cavities' of one of the babies, commonly the recipient. In such cases, the cord of the baby close to death can be coagulated (blocked off) by diathermy (heating the vessel) to save the other twin.

These procedures will be discussed with you in detail and the one most appropriate for your pregnancy will be discussed. Please ask the doctor any questions that you may have.

For further details please telephone **0121 1377 extension 4270.**

If you are put through to an answer service please leave your contact details.

**Your call will be returned.**