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Editorial

FIRST TRIMESTER CHORION BIOPSY

by

VITTHAL N. PURANDARE, M.D., F.R.C.S.E.

Until recently amniocentesis was the only way for detecting sex of the foetus or detecting genetic abnormalities. This usually required waiting till sixteen weeks of gestation and ten to fifteen mils. of amniotic fluid.

Amniocentesis at this stage is not without danger to mother and foetus. When carried out blindly without ultrasonic control, it often leads to failed tap, bloody tap and maternal or foetal damage leading to abortion or severe maternal infection. The use of ultrasonographic control considerably reduces these dangers, however the need to wait till the second trimester for the diagnosis is itself a disadvantage. Should termination of pregnancy be required, the hazards of mid-trimester termination adds to the maternal risks; in particular are the patients with previous caesarean section.

Chorion biopsy carried out by six to ten weeks of gestation avoids all these disadvantages. The procedure is carried out at sixth to eighth week of gestation after ultrasonic confirmation of a viable pregnancy. It should not be delayed till the twelfth week of gestation as the number of degenerative cells in the aspiration increases and hampers the diagnosis. The procedure is carried out transvaginally and through the cervical canal. Under ultrasonic control a thin polythene tube is inserted upto the chorionic plate and aspiration performed. The aspirated tissue is immediately identified under inverted microscope. The collaboration of a genetic specialist is essential at this stage.

The entire procedure is carried out as an outpatient procedure, not needing any anaesthesia. The procedure is painless and the danger of foetal trauma is minimal. Should the procedure be unsatisfactory it can safely be repeated after an interval of two days. The incidence of abortion is low and should remain under three per cent. With experience, in some centres it is not more than one per cent. Should termination of pregnancy be in-

dicated a safe first trimester termination can be performed.

At present it has some disadvantages. It requires expensive instruments like an ultrasonic scan machine, and flourescent microscope and also a genetic specialist with a well-equipped laboratory for the collaboration. The expertise for biopsy under scan and for chromosome analysis and culture is necessary.

Presence of severe vaginal infection may require a short delay until it is cleared with treatment. The chorion biopsy can keep the maternal tissue and microbial contamination to a minimum when properly performed.

In addition to sex determination which can be performed immediately, diagnosis of foetal abnormal haemoglobinopathies and inborn errors of metabolism is possible. Even the early diagnosis of foetal cystic fibrosis and 21-trisomy (Down's syndrome) is within reach. Assuming that three weeks will be lost in chromosome culture, the diagnosis will still be possible before the second trimester.

Reporting on their preliminary experience on chorion biopsy in Obstetric and Poediatric conferences in Bombay, Chittaranjan Hema Purandare reported their first series of hundred cases. There were no maternal or foetal complications, no unwanted abortions. The diagnostic accuracy of sex determination was hundred per cent, counter-checking with the aborted material, and with amniocentesis carried out later in pregnancy of the cases which are not terminated.

In conclusion, chorion biopsy is a very promising new field in early antenatal diagnosis of certain foetal conditions which need a safer and earlier termination of pregnancy.