

AMNIOSCOPY AND PLACENTAL FUNCTIONS

by

P. R. VAIDYA,* M.D., D.G.O., D.F.P., F.C.P.S.

G. S. RAO,** M.D., D.G.O.

V. R. AMBIYE,*** M.D., D.G.O.

and

R. P. PATIL,*** M.D., F.C.P.S., D.G.O.

Introduction

Amnioscopy is a very useful instrument to detect foetal danger due to hypoxia in the last few weeks of pregnancy.

We have tried to evaluate the use of amnioscopy in some of our problem cases. We have also correlated our amnioscopic findings with other parameters of placental function.

Material and Methods

We have tried to evaluate this procedure in 9 cases of toxæmia, 6 of postmaturity, 2 of intra uterine foetal death and 1 of Rh. incompatibility. The period of gestation at the time of first examination varied from 24 weeks to 43 weeks.

A 16 mm. diameter amnioscope with fibreoptic light was used for all the cases. Examination was possible if the cervix admitted one finger easily.

The technique used for amnioscopy was as described by Saling and Dudenhausen (1976). After initial cleaning of the vagina, the cervix is exposed. Amnioscope with an obturator is passed through the cervix till it reaches the internal os. The instrument is then advanced 1 cm.

*Prof. and Head of Dept.

**Tutor.

***Lecturer.

Dept. OB. & GY. L.T.M.M.C./L.T.M.G.H.,
Sion, Bombay 400 022.

Accepted for publication on 28-5-80.

in to uterus towards the sacral hollow at an angle of about 30 degrees. After removal of the obturator the lower pole of the amniotic sac can be visualised by somewhat retracting the instrument and bringing it in to a horizontal position.

The amniotic fluid can then be examined as if it was contained in a cuvette consisting on one side of a transparent amnion and on the other side of the light skin of the presenting foetal part or large flakes of vernix. Meconium flakes are best seen in motion set by the instrumental movements.

All our patients were also screened by serial urinary oestriol levels, vaginal cytology and cervical mucus, much before taking them up for amnioscopic evaluation. Amnioscope was reserved till we felt that interference was possible in case hypoxia is revealed.

Results

In all the 6 cases of postmaturity studied detailed history was taken to establish the diagnosis. As shown in Table I we did not induce labour in cases with postmaturity of 1-1½ months because by various placental function tests we were sure that the foetus was not in jeopardy. When serial examination revealed a fall in urinary oestrogens by more than 50% and a poor progesterogenic vaginal smears, the patient went in labour spontaneously,

TABLE I
Postmaturity

Post-maturity	No.	Urinary Oestrogen	KPI	Amnioscopy	Induction	Liquor Meconium-stained
1 month	1	1 (50%)	1 (20%)	clear	—	1
1½ months	2	—	1 (50%) 1 (50%)	clear	—	—
2 months	3	—	1 (20%)	clear	1	1

before planning for induction. However, the amniotic fluid was thin meconium stained in one of these cases. There were 3 cases of postmaturity of 2 months. Vaginal cytology smears were good in 2 of these and indicated a poor progestogenic effect with a KPI of 20% in the third. Induction of labour with amniotomy and pitocin drip was successful in this patient.

Cervical mucus was clear in all these cases. Thus in these cases amnioscopy with other placental function tests gave us a scientific confidence for noninterference. Amniocentesis for maturity study was done in 2 cases of postmaturity of 1-1½ months. The liquor was clear and foetal maturity was indicated. All these babies weighed 2.25 to 3.35 kg. and had good Apgar score.

Table II indicates that among the 9 cases of pre-eclampsia studied, 7 had mild pre-eclampsia and the other moderate pre-eclampsia.

Amnioscopy revealed yellow liquor in 1 and thick meconium stained liquor in another case of mild pre-eclampsia. The urinary oestrogens and vaginal cytology revealed deterioration of placental function. There was a fall in urinary oestrogens from 26 mgs. to 16 mgs. and a rise in KPI from 10% to 20% in one of them. Weight of these babies varied from 2.3 to 3.55 kg.

We had 2 cases of suspected intra-uterine foetal death. Both were between 24-28 weeks of gestation. KPI was 20% and amnioscopy showed yellow liquor in both of them. One required ARM with -pitocin and the other delivered spontaneously.

We could study only 1 case of Rh incompatibility. She had a past bad obstetric history. Repeated placental function tests and amnioscopic studies were normal and she delivered normally at

TABLE II
Pre-eclampsia

Severity	Oestrogens	KPI	Aminoscopy	Mode of delivery	Liquor
Mild 7	50% fall-1	30-40%-1	yellow-2	spontaneous	meconium 4
	fall-1	20-25%-2	ROM-1	vag 3	clear 3
		good-4	clear-1	c.s. 1 Induction vag. 2 c.s. 1	
Moderate 2	—	5/95/0-1	clear-2	spontaneous	clear 2
		1/85/15-1		vag. 2	

term a healthy male baby weighing 3.2 kg.

Discussion

Amnioscopy is advised in the following conditions to assess the foeto-placental complex (Saling).

(A) Late pregnancy

1. Toxaemia
2. Postmaturity
3. Diabetes
4. Rh incompatibility

(B) In labour

1. Admission amnioscopy
2. For rupture of membranes
3. Suspicion of foetal death
4. Detection of premature rupture of membrane

Passage of meconium is an early warning sign of foetal hypoxic critical situation. The antepartum mortality rate is definitely lower in amnioscopically supervised foetus, as compared to non-supervised foetus.

Less time, technical and staff expenses are considered as advantage of amnioscopy over cardiotocography by Saling. He also considers the reliability of the two procedures as nearly equivalent. Nwosu (1977) considers amnioscopy as an alternative to amniocentesis in postmaturity cases provided a certain degree of cervical dilatation is present.

Saling (1976) advises rupture of membranes if the amniotic fluid is meconium stained and repetition of amnioscopy at appropriate interval if the liquor is clear.

Vaginal cytology is an useful index to

predict foetal jeopardy (Greene *et al* 1977). In late pregnancy a KPI of more than 10% usually means altered endocrinopathy. Consistent crystal formation in cervical mucus also indicates foetal jeopardy (Zondek and Rozin). We have found these two parameters extremely useful for foetal evaluation.

Saling and Dudenhausen (1976) have found a failure rate of 0.6/1000. Infection and premature rupture of membranes are seen in 1-2% of cases. Premature onset of labour can occur in 25% of cases but this was not supported in our small series.

In conclusion amnioscopy is an extremely useful instrument to monitor high risk pregnancies in late antenatal period.

Acknowledgement

We thank our Dean, Dr. J. V. Bhatt for allowing us to use the hospital data.

References

1. Greene, J. W., Duhring, J. L. and Smith, K.: Placental function tests in current developments in perinatology by Zuspan, F. P. The C. V. Mosby Co. Janttois, p-156, 1977.
2. Nwosu, U. C.: Perinatal medicine by Bolognese and Schwartz, Williams and Wilkins Co., Baltimore, p. 194, 1977.
3. Saling, E.: Experiences and first results in Perinatal medicine by Stembere, E. K., Polacek, K. and Sabata, V. George Thieme publishers Stuttgart, Zechoslovak, p. 49, 1975.
4. Saling, E. and Dudenhausen, J. W.: Endoscopy by Berci, G. Appleton Century Crofts, Newyork, p. 465-472, 1976.
5. Zondek, B. and Rozin, S.: *Obstet. Gynec* 3: 463, 1954.