TRANSPLACENTAL HAEMORRHAGE IN THERAPEUTIC ABORTIONS

by

VEENA BAKSHI,* M.D.

and

Y. PINTO ROSARIO,** M.D.

It has been well established that transplacental haemorrhage of foetal blood into maternal circulation is of importance in clinical medicine. In 1941 Levine *et al,* postulated that transplacental haemorrhage caused Rh iso-immunization. Weiner in 1948 noticed the escape of foetal cells into maternal circulation. Transplacental haemorrhage in spontaneous abortion has also been documented (Mathews, 1969). Any disturbance at the choriodecidual junction leads to the escape of large number of foetal cells into the maternal circulation.

The present study was carried out to find the occurrence of transplacental haemorrhage in abortions either in the natural process or where surgical interference was needed for the completion of abortion and in those whose pregnancies were terminated by artificial procedures.

A total of 253 cases taken from the O.P.D. and maternity wards of Lady Hardinge Hospital were studied. Fifty-two patients were taken as controls, 10 being males, 10 non-pregnant females and the remaining 32 were patients upto 28 weeks of gestation.

In the second group 30 patients came with threatened abortion but continued with their pregnancy. Forty-nine patients aborted spontaneously and 60 needed evacuation to complete the abortion process. The patients in the third group had medical termination of pregnancy either by the vaginal route, viz. suction-evacuation, suction evacuation with curettage and D & C, or by the abdominal route using intra-uterine saline or hysterotomy.

The slides were prepared and scanned for foetal cells by Feldahaus modification of Kleihauer and Betke's technique. The foetal cells appeared as greenish refractile bodies as compared to maternal ghost cells.

Observation

Table 1 shows the incidence of foeto-maternal haemorrhage in different groups. In normal pregnancy it was 9.4%. Different types of abortions showed a rising incidence of transplacental haemorrhage from 13.3% in threatened abortion to 41.6% in incomplete abortion. In the latter group, surgical interference led to a severe disruption at the choriodecidual junction. The incidence almost doubled from the pre-curettage series showing a mean haemorrhage of 5.9 ml. Further it was noticed that when oxytocic drugs were used the incidence went still higher 53.5% as compared to 41.6% when only curettage was done.

A two fold risk of transplacental haemorrhage was noticed in patients who had

*Senior Resident, Lady Hardinge Medical College & Hospital.

**Prof. & Head of the Dept. of Obst. & Gynaecology, Lady Hardinge Medical College & Hospital, New Delhi.

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TABLE I
Incidence of Foetomaternal Haemorrhage in Different Groups

Controls	No. of patients	+ve for F.C.	Incidence	Mean Haem. Ml
Non-pregnant Females	10	0	0	0
Males	10	0	0	0
Patients upto 28 wks.	32	3	9.4	0.6
Threatened abortions	30	4	13.3	0.8
Spontaneous abortions	49	11	22.4	2.6'
Incomplete abortions	60	25	41.6	5.9
Therapeutic Abortions				
Suction Evacuation	20	5	25.0	1.3
Suction Evacuation with D & C	14	6	42.8	2.5
Dilatation and Curettage	18	12	66.6	9.4
Hysterotomy	7	2	28.5	2.8
I.U. Saline	3	1	33.3	5.0

medical termination of pregnancy as compared to those who had spontaneous abortion, 22.9% with spontaneous abortions, with a mean haemorrhage of 2.3 ml.

Sixty-two patients who had undergone therapeutic abortion showed an incidence of 41.9% of foetomaternal haemorrhage with a mean of 4.2 ml. Out of 62 cases 52 were terminated vaginally, 18 by D & C, 20 by suction evacuation and 14 had suction evacuation followed by gentle curettage. Ten patients were terminated abdominally 7 by hysterotomy 3 by intrauterine saline (Table II).

With suction evacuation the incidence of transplacental haemorrhage was 25% and the leaks were minimal (1.3 ml) when suction evacuation was accompanied with curettage the incidence rose upto 42.8% with a leak of 2.5 ml. The highest incidence of 66.1% and the largest leak of 9.4 ml was found in patients in whom D & C was performed.

A co-relation with the duration of pregnancy showed that the leaks and incidence were minimal when suction evacuation was carried in earlier weeks of gestation. Between 6 to 8 weeks only 10% patients showed foetal cells where as between 9-12 weeks 33.3% were positive for foetal cells. But with D & C even when performed in early weeks the incidence was 55.5% i.e. 5½ time more and the mean haemorrhage was 2 ml, 1½ times more than suction evacuation (Table III).

Discussion

The study indicated that the incidence of transplacental haemorrhage rose gradually with different types of abortion and was maximum with incomplete abortion. Similar results were shown by Ghosh and Aggarwal (1968 & 1969), Knox (1961), Walsh (1970) and Katz (1969).

The method of termination and the period of gestation played a great role in the causation of transplacental haemorrhage.

Suction evacuation was proved to be the least harmful particularly when carried out in early weeks of pregnancy. The incidence of 25% foetomaternal haemorrhage were similar to that reported by Walsh and Lewis (1970). The incidence of transplacemental haemorrhage rose nearly to 8 times when D & C was performed to terminate the pregnancy. This incidence rose as the period of pregnancy in-

TABLE II

Foetomaternal Haemorrhage in Therapeutic Abortions

Different Groups	Pre-operative					Post-operative			
	No. of Pts.	+ve for F.C.	% age	Range of %age	Mean in ml	+ve for FC	% age	Range of %age	Mean in ml
Suction Evacuation	20	0	0	0	0	5	25	0.1-0.2	1.3
Suction Evacuation	34					11	32.3		3.8
and D & C	14	0	0	0	0	6	42.8	0.1-0.4	2.5
D & C	18	0	0	0	0	12	66.6	0.2-0.8	9.4
Hysterotomy	7	1	14.2	0-0.1	0.7	2	28.5	0.1-0.3	2.1
I. U. Saline	3	0	0	0	0	1	33.3	0 0.3	5
Total	62	1	1.61	0-0.1	0	26	41.9	0.1-0.8	5.4

TABLE III

Foetomaternal Haemorrhage in Relation to Period of Gestation and Method of Termination

Gestation in weeks	Suction Evacuation				Dilatation & Curettage			
	No. of Pts.	+ve for foetar cells	%age	Mean in ml	No. of cases	+ve foetar cells	% age	Mean in ml
6 8	10	1	10.0	0.5	9	5	55.5	2.0
9-12	6	2	33.3	0.8	6	4	66.6	2.9

creased (66.6% with a mean spill of 9.4 ml as compared to 25% with a mean haemorrhage of 1.3 ml with suction evacuation).

Hence it is suggested that suction evacuation done early in pregnancy be the method of choice for termination of pregnancy.

Abortion indicates a potential immunizing threat and a risk of subsequent sensitization in Rh negative patients.

A serological study of Rh negative patients after abortion is recommended to estimate the incidence of Rh immunization after induced abortion. Therefore all Rh negative patients undergoing medical termination of pregnancy after 6 weeks of gestation could be protected with Anti D gamma globulin.

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