

PREGNANCY AND CARDIAC SURGERY

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SUMMARY

Ten patients with organic heart disease having cardiac surgery shortly before or during pregnancy have been studied. Particular emphasis has been led on the effect of pregnancy and labour on the maternal and fetal status. Out of 10 patients, seven were of Mitral stenosis and three of VSD. 4 patients needed mitral valvotomy during pregnancy. The functional grading of 2 patients deteriorated after delivery. Review of literature states that mitral valvotomy has a definite role, particularly during pregnancy.

Introduction

Women with organic heart disease usually cannot tolerate the significant hemodynamic changes associated with pregnancy. Cardiac surgery helps in increasing the cardiac reserve so as to withstand the stress of pregnancy better. This paper deals with the effect of cardiac surgery on pregnancy and the maternal - foetal outcome.

Materials and Methods

This prospective study includes births to women with organic heart disease admitted at Eden Hospital during the period January 1988 and April 1989 and

who have had cardiac surgery either shortly before or during pregnancy.

Evaluation of maternal cardiac status at the time of admission, was done by clinical methods in combination with chest X-rays and ECG studies. Presence or absence of maternal congestive heart failure was noted at any time during pregnancy and labour. Grading of the functional status before and after cardiac surgery was done according to the New York Heart Association. Grading was also done after delivery to note the effect of labour of the functional status of the heart.

The birth weight, Apgar score and gestational age of the neonate was noted in each case. All mothers and neonates were examined daily for 2 weeks to detect any morbidity.

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Results

TABLE - I
PROFILE OF THE CASES

Case	Pathology	Type of surgery	Time of opn.		Anesthesia	NYHA grading		
			during preg.	before preg.		before opn.	after opn.	after delivery
1.	MS	MV	+	-	GA	III	II	II
2.	MS	MV	+	-	GA	III	II	II
3.	MS	MV	+	-	GA	IV	II	III
4.	VSD	Correction	-	+	GA	III	I	II
5.	VSD	Correction	-	+	GA	III	II	II
6.	MS	MV	-	+	GA	III	II	II
7.	MS	MV	+	-	GA	III	II	II
8.	MS	MV	-	+	GA	IV	III	IV
9.	MS	MV	-	+	GA	III	II	II
10.	VSD	Correction	-	+	GA	III	II	II

MS - Mitral stenosis

MV - Mitral valvotomy

VSD - Ventricular septal defect

TABLE - II
OBSTETRICAL PROFILE

No.	Age Yrs.	Gravidity	Gestational age (weeks) at surgery	Interval between surg. & Preg.	Birth weight kg.	Morbidity	
						Maternal	Fetal
1.	22	1	26	-	1.8	-	Preterm delivery
2.	19	1	32	-	2.2	-	-
3.	28	5	24	-	2.6	CHF	-
4.	19	1	-	1 yr.	1.7	-	Preterm delivery
5.	22	1	-	1 yr.	2.7	-	-
6.	21	1	-	2 mths.	2.6	-	-
7.	20	1	24	-	2.5	-	-
8.	26	1	-	1½ yrs.	2.45	CHF	-
9.	20	2	-	1 yr.	0.5	-	spont. abortion
10.	19	1	-	3	2.4	-	-

Table I gives the case profiles. Out of 10 patients who had undergone cardiac surgery during or shortly before pregnancy, 7 were of Mitral stenosis who underwent closed transventricular mitral valvotomy and 3 were of congenital VSD treated by

correction of the defect. Of the 7 undergoing mitral valvotomy, 4 needed operation during the course of pregnancy. All of the patients improved upon their functional grading after operation. However the stress of pregnancy and labour resulted in a deterioration of the grading in 2 patients. The main indications for Mitral valvotomy during pregnancy were recurrent pulmonary edema and recurrent haemoptysis. All patients were in sinus rhythm.

Table II shows the obstetrical profile of the patients of the ten patients, 7 reached till term, whereas one underwent spontaneous abortion and two others preterm delivery. All the seven term pregnancies had spontaneous onset of labour with vaginal delivery. The mean of the term birth weight was 2.46 kg. The 1 min Apgar score was 8, and above in all cases.

Discussion

Mitral valvotomy has largely been replaced by valve replacement because of the long term benefits of the latter. Valvotomy has the disadvantage of development of re-stenosis, its frequency being a function of the duration after surgery. However, the extra corporeal circulation during open-heart surgery and the continued use of anticoagulants carry an increased risk during pregnancy. Thus valvotomy has a definite role in the management of pregnant women. Usually valvotomy is carried out as an elective, and planned operation. During pregnancy it may have to be done as an emergency procedure, but the risks are more and benefits less.

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Case No.	Age	Parity	Duration of pregnancy	Mode of delivery	Weight of baby (kg)	1 min Apgar score
1	28	0	38 weeks	Vaginal	2.8	8
2	32	1	36 weeks	Vaginal	2.5	7
3	25	0	37 weeks	Vaginal	2.6	8
4	30	2	35 weeks	Vaginal	2.4	7
5	28	0	38 weeks	Vaginal	2.7	8
6	31	1	36 weeks	Vaginal	2.5	7
7	29	0	37 weeks	Vaginal	2.6	8
8	33	0	34 weeks	Spontaneous abortion	-	-
9	27	0	32 weeks	Preterm delivery	-	-
10	30	0	38 weeks	Vaginal	2.5	7
Total						