

Retrospective analysis of second trimester congenital anomalous fetuses and termination

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Abstract

The study was conducted with the aim to analyze the various anomalies detected in second trimester anomaly scan and their termination. Congenital anomalous fetuses are one of the indications for medical termination of pregnancy in second trimester. About 100 cases coming for routine antenatal checkup with ultrasonography suggestive at gross congenital anomalies were studied. Maximum number of cases were involving central nervous among which most commonly detected anomaly was anencephaly other systems involved where genitourinary, cardiovascular system, musculoskeletal system and miscellaneous. The mean genital age was 17.5 weeks for medical termination of pregnancy. Medical and mechanical methods were used for termination. Medical method was the method used in unscarred uterus. Mechanical method was used in scarred uterus. Medical method involved use of Tab. misoprostal 200 mg and Mechanical method involved use of intracervical Foley's induction. Methods were compared in terms of effectiveness, duration for termination and complications.

Key words: Anomalies detected, anomaly scan, termination methods.

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INTRODUCTION

A congenital anomaly is an abnormality of structure, function or body metabolism that is present at birth and results in physical and mental disability or is fatal. Each year 8 million children are born world-wide with congenital anomalies. 3.3 million die before age of 5. 3.2 million survivors may be mentally and physically disabled. Second trimester Medical termination of pregnancy accounts for about 15-20% of all MTP's they are responsible for two-thirds of abortion related complications if conducted illegally or by unsafe methods. To reduce complications it is advisable to conduct second

trimester MTP's at health care facility. Finding the optimum method is critical for second trimester MTP. Various methods are applied for second trimester MTP's in anomalous fetuses.

METHODS

This was retrospective analysis carried out at tertiary care hospital, initiated after institutional ethics committee approval. 100 cases with second trimester scan suggesting gross fetal anomalies were selected for termination.

Aims

- 1-To analyze the common congenital anomalies occurring in ANC patients attending tertiary health care institute.
- 2-To study the various termination methods available for second trimester MTPs .
- 3- To compare various methods available for second trimester MTPs for congenital anomalies regarding their safety, induction abortion interval and complications occurring with them

MATERIALS AND METHODS

Inclusion criteria: 1-patients with 14 to 20 wks gestation with Anomaly scan s/o gross congenital anomalies

2-Patients whose pediatrician reference has been done and who has declared the anomalies are in correctable in future and going to affect physical or mental health of the baby if it is going to born.

3 patients giving consent for termination as well as for this study.

Exclusion criteria: 1-patients with gestational age of less than 14wks and more than 20 wks

2-patients with IUD, MTPs for other reasons like failed contraception or medical reasons of mother, or the social ground MTPs

3- Patients having medical disorders or allergic issues for MTP drugs

4-Patients not giving consent

All patients of gestational age between 14-20weeks with second trimester ultrasonography s/o gross fetal anomalies not compatible with life or are in correctable leaving the baby physically and mentally handicapped as suggested by pediatrician are admitted.

Detailed history, physical examination, including general examination systemic examination and obstetric examination done. Written valid informed consent obtained for termination of pregnancy in C form and I form filled by 2 consulting gynecologists and registered in MTP book of the institute.

Basic laboratory investigations like CBC Blood group, HIV, HbSAg and RBS done of each patient.

The method of termination of pregnancy is chosen acc to pts general condition lie age, parity, gestational age/o prev scar. The various anomalies in fetuses and the termination methods were analyzed.

RESULTS

According to the analysis majority of the anomalies encountered in our institute were involving the central nervous system followed by genitourinary, others, cardiovascular system and musculoskeletal in sequence.

About 71 cases were involving central nervous system, 10 from genitourinary, 9 were miscellaneous, 6 cardiovascular, 4 musculoskeletal. Most common system involved was CNS and most common anomaly was Anencephaly which constituted 40 cases among those detected followed by meningomyelocele which constituted 9 cases hydrocephalus consisting 6 cases spina bifida 6 cases. Renal agenesis was the commonest anomaly involving genitourinary system constituting 9 cases, miscellaneous cases included conjoint twins, cystic fibrosis other cardiovascular system was involved in 4 cases and with multiple defects.

Table 1:

Anomaly	Number of Cases	Percentage (%)
Anencephaly	40	40 %
Anencephaly with spina bifida	1	1 %
Conjoint twins	3	3 %
Cystic fibrosis	2	2 %
Gastrochiasis	1	1 %
Haloprosencephaly	3	3 %
Hydrocephaly	6	6 %
Hydrops fetalis	4	4 %
Meningocele	1	1 %
Meningomyelocele	9	9 %
Microcephaly	5	5 %
Multiple defects	2	2 %
Renal agenesis	9	9 %
Renal dysplasia, agenesis	1	1 %
Skeletal dysplasia	3	3 %
Spina bifida	6	6 %
TGA	3	3 %
TGA with PDA	1	1 %
Total	100	100 %

Table 2:

Gestational Age (In Weeks)	Number of Cases	Percentage (%)
13 Weeks	3	3 %
14 Weeks	6	6 %
15 Weeks	5	5 %
16 Weeks	13	13 %
17 Weeks	14	14 %
18 Weeks	27	26 %
19 Weeks	17	17 %
20 Weeks	15	15 %
Total	100	100 %

MEAN +/- STANDARD DEVIATION=17.5=18weeks

According to analysis, the mean gestational age at which anomalies were detected was 18weeks. About 41 cases were detected before 18weeks. Anomalies like anencephaly can be detected as early as 11weeks and so cases with less than 18weeks mostly constituted anencephaly which was the most common anomaly detected.

Medical method involved use of tab misoprostol 200microgram every 4 hourly for 5 doses. Alternate method used when medical method failed to terminate after 5 doses of misoprostol was intracervical Foleys induction. Medical method was used as the method of choice in unscarred uterus. Mechanical method involved use of Intra cervical Foleys with bulb inflation with 40cc normal saline and traction. After the expulsion of bulb Inj Pitocin 5IU was used in all cases. Mechanical method was the method of choice in previously scarred uterus. The rescue method when medical and mechanical method failed was hysterotomy.

Table 3

Type of Method	Successful	Unsuccessful	Total (%)
Mechanical	11 (12 %)	01 (12.5 %)	12 (12)
Medical	81 (88 %)	07 (87.5 %)	88 (88)
Total	92 (100 %)	08 (100%)	100 (100)

Among the study, about 88 cases were terminated medically with a success rate of 92%, 8% needed alternate method of termination. 12 cases were terminated mechanically with success rate of 91%. One case where mechanical method was used did not terminate even after Inj. Pitocin augmentation and hysterotomy was done.

Table 4:

Method Used	Duration			Total
	<24 hrs	24-48hrs	>48 hrs	
Intracervical	0	11	0	11 (100 %)
Foleys	(00 %)	(100 %)	(00 %)	
Misoprostol	81	0 (00 %)	0	81 (100 %)
	(100 %)		(00 %)	
Misoprostol+ Intra cervical Foleys	0	0 (00 %)	7	7 (100 %)
	(00 %)		(100 %)	
Total	81 (81 %)	12 (12 %)	7 (7 %)	100 (100 %)

P=0.000 Highly Significant (P<0.001)
(Test : Chi-square Test)

When medical method was used the time required for complete abortion was less than 24 hours. And most cases were terminated within 24 hours and before the completion of 5 doses of tab misoprostol 200 microgram. The cases which did not terminate after completion of 5 doses of tab misoprostol were declared failed medical method of termination and alternate method was used. Alternate method used was intracervical Foleys induction. About 7 cases which failed to terminate with medical method alternate method was used. All these 7 patients needed Inj. Pitocin 5IU augmentation following expulsion of intra-cervical Foleys for complete abortion. This increased the induction abortion interval. And these cases after failed medical method needed further 24-48 hours for complete termination. The induction abortion interval was prolonged when alternate method was used when medical method failed to more than 48 hours for complete termination. When mechanical method was used for termination Inj. Pitocin 5IU was used for augmentation following intra-cervical Foleys expulsion and most of the cases were terminated between 24-48 hours in which intra cervical Foleys was expelled out in 12-24 hours and with Inj. Pitocin 5IU it took further time for beginning of uterine activity and complete expulsion of placenta to occur. The duration of induction abortion was about 24-

48 hours for 11 cases among the 12 cases in which mechanical method was used. One case did not terminate following mechanical induction and further Inj. pitocin 5IU augmentation. There was no evidence of uterine activity even after 48 hours of Inj. pitocin 5IU augmentation and the patient was taken for hysterectomy.

Type of Method	Complication		Total
	Yes	No	
Mechanical	0 (00 %)	11 (100 %)	11 (100 %)
Medical	8 (9.9 %)	73 (90.1 %)	81 (100 %)
Medical + Mechanical	0 (00 %)	7 (100 %)	7 (100 %)
Total	8 (8 %)	92 (92 %)	100 (100 %)

Complications such as hemorrhage, incomplete abortion, retained placenta, infections were suspected. Complications occurred following medical method in 10% cases. In cases where bleeding pv was reported post abortion scan was done. 7 patients were reported with incomplete abortion on post abortion scan and needed further surgical management or D and C. 1 patient was reported with infection and needed antibiotic treatment. There were no complications reported with mechanical method.

DISCUSSION

Congenital anomalous fetuses constitute about 2-3% of live births every year. Patients attending ANC clinic in second trimester are advised for anomaly scan. This has led to an increased rate of detection of congenital anomalies in fetuses. Similarly pediatric reference, pediatric surgery reference can be taken to know if the anomalies are compatible or correctable and further decision regarding termination or continuation can be taken. Some centers recommend USG around 11-14 weeks others recommend at 16-18 weeks followed by serial scans to confirm anomaly. In our study maximum number of anomalies were detected at 18 weeks because in our institute patients are advised anomaly scan at 18-20 weeks. Most common system involved was CNS and most common anomaly detected was anencephaly. Similar study conducted by Madina Hospital for prenatal diagnosis of congenital anomalies in fetuses in second trimester found that CNS was commonly involved and Hydrocephalus was the commonest anomaly. Unsupervised and unsafe abortions continue to be a major cause of maternal morbidity worldwide. Introduction and availability of drugs which cause mini labor and mechanical method which is associated with less complications have revolutionized the performance of termination of pregnancy. So, the emphasis is less on

surgical methods and more on medical and mechanical methods of termination in second trimester. The study revealed that different methods exist for termination of second trimester miscarriage. These include tab misoprostol, intra cervical Foleys catheter, misoprostol followed by Foleys catheter and hysterotomy. Overall, all the methods proved efficacious. The regimen protocol for second trimester pregnancy termination with 200microgram intra vaginal misoprostol, repeated every 4 hourly for 5 doses. The induction to delivery time when tab misoprostol was used was less than 24hours. About 88 cases with unscarred uterus were terminated with tab misoprostol, out of which 81 cases were terminated successfully and remaining 7 cases which failed to terminate after 5 doses of tab misoprostol needed alternate method for termination. Other studies showed marked variation. The induction-abortion interval was shorter in Ranjan *et al*, study done at womens hospital assiut university. Complications reported with medical method, 7 patients were reported with incomplete abortion and one patient was reported with infection. Complications occurred with medical method in 10% cases with value ($p>0.05$) which is non significant and could be managed with further treatment but increased the further stay in hospital even when medical method was used as the method of choice for termination. Cases where mechanical method was used involved use of 16 French Foleys catheter with its balloon inflated with 40cc saline and traction applied. Inj. Pitocin 5IU for augmentation following expulsion of intracervical Foleys was used in all cases. The time required for expulsion of balloon and further augmentation with inj pitocin was more compared to medical method. The induction abortion interval when mechanical method was used was thus prolonged and among the 12 cases in which mechanical method was used 11 cases were terminated in time interval of 24-48 hours. The induction abortion interval with mechanical method with p value ($p<0.001$) which is statistically significant and this method increased patients further stay in hospital. There were no complications reported with mechanical method and similar other studies which used mechanical method. One case did not terminate with mechanical method and further Inj. Pitocin augmentation and there was no evidence of uterine activity noted and the patient needed hysterotomy for termination. Similar studies were conducted by Nasreen *et al*, Womens hospital Assiut.

CONCLUSION

Among the cases studied maximum number of cases with congenital anomolous fetuses involved central nervous system. Most common anomaly detected in the study pts was anencephaly. Study showed that both medical and mechanical methods were effective in terms of termination. Antenatal ultrasound is a non-invasive, highly sensitive, accurate, cost effective imaging technique and gives good results. It can screen ANC pts in second trimester for malformed fetuses and guide for further management. Study showed that both methods were effective in terms of termination. Mechanical method needed prolonged duration for termination and increased further patient stay at hospital. Medical method needed with less duration for termination, with statistically non signification complication rate.

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