

## ORIGINAL ARTICLE

**Effect of Membrane Sweeping on the Initiation of Spontaneous Labour**RABIKA BINT KHAMIS BUTT<sup>1</sup>, AMNA KAZI<sup>2</sup>, NAZISH JAVAID<sup>3</sup>, JAMSHED RAHIM<sup>4</sup>, HUMAIRA ZULFIQAR SAIFEE<sup>5</sup>, HIRA SHEIKH<sup>6</sup><sup>1</sup>Consultant Gynaecologist, Health Bridge Hospital, Ghazi Road, Lahore<sup>2</sup>Assistant Professor, Department of Obstetrics & Gynaecology, Shaikh Zayed Hospital, Lahore<sup>3</sup>Women Medical Officer, Jinnah Satellite Filter Clinic C2, Green Town, Township, Lahore<sup>4</sup>Assistant Professor, Department of Urology, Shaikh Zayed Hospital, Lahore<sup>5</sup>Senior Registrar, Services Hospital, Lahore<sup>6</sup>House Officer, Sharif Medical City Hospital, Lahore.Correspondence to Dr Rabika Bint Khamis Butt, E-mail: [rabikarizwan@gmail.com](mailto:rabikarizwan@gmail.com) Cell: 0333-4446072**ABSTRACT****Background:** Membrane sweeping causes induction of labour by release of prostaglandins, and other hormones.**Aim:** To determine efficacy of membrane sweeping on induction of spontaneous labour in post-date women.**Study design:** Randomized controlled trial.**Place and duration of study:** Department of Obstetrics & Gynaecology, Health Bridge Hospital, Ghazi Road, Lahore from 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2020.**Methodology:** One hundred and fifty pregnant women with  $\geq 40$  weeks of gestation were randomly divided into two groups of 75 pregnant women each. Group A were those who consented for undergoing membrane sweeping whereas group B did not undergo this process.**Results:** The mean age of the enrolled pregnant women was  $25.7 \pm 3.05$  years. The mean duration of pregnancy in group A was  $40.1 \pm 0.2$  weeks and in group B was  $40.2 \pm 0.1$  weeks. Regarding spontaneous onset of labour, in group A, 38(50.6%) patients went into labour with sweeping of membranes and in group B, 10(13.4%) patients had spontaneous onset of labour. There were only two cases of infection reported in Group A and one in group B.**Conclusion:** Membrane sweeping for natural induction of spontaneous labour.**Key words:** Membrane sweeping, Labour induction, Efficacy**INTRODUCTION**

The process of membrane sweeping has been long introduced in the obstetrical practice to initiate labour in cases of prolonged pregnancy since a long time<sup>1</sup>. This is done for ripening of cervix when no other mechanical or chemical method is opted. The procedure has a history of 200 years, however as science and technology has widely advanced; the questions regarding its efficacy have been raised. The positive evidence whereas others elaborated modest likelihood for initiation of spontaneous delivery with the assistance of membrane sweeping<sup>2-6</sup>.

The traditional method of membrane sweeping involves stimulation of uterus to contract by stripping the membranes and releasing prostaglandins locally. This facilitates the induction of labour. There are many other chemical, pharmacological and mechanical methods for performing labour induction but mostly the obstetricians prefer using this technique. The membrane is separated by inserting 1-2 fingers into the cervical os and circulating them in circular way for making the inferior pole of detaching the membrane from the lower segment of uterus. This procedure further initiates the release of prostaglandin which is imperative for labour initiation<sup>7-10</sup>.

The present study was done to assess the efficacy of membrane sweeping in post term pregnant women for their healthy delivery outcomes.

**MATERIALS AND METHODS**

This randomized controlled trial was conducted at

Received on 27-03-2021

Accepted on 03-08-2021

Department of Obstetrics & Gynaecology, Health Bridge Hospital, Ghazi Road, Lahore from 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2020 after permission from IRB. A total of 150 healthy pregnant women were included after their formal informed consent. These were further divided into two groups. Group A (75 women) were those who consented for undergoing membrane sweeping whereas group B (75 women) did not undergo this process. All pregnant women from the age of  $>18$  years were included. The inclusion criteria involved women with gestational age  $\geq 40$  with medical or obstetrical complications of pregnancy such as hypertension and gestational diabetes. The demographic information was entered in well structured questionnaire. Membrane sweeping was done in Group A, by inserting well cleaned two circumferential moving examining fingers. The mechanical technique was stated from 40 weeks of gestational, continued after lapse of 48 hours for maximally upto 41 weeks of gestation. Data was analyzed by SPSS version 24.0 in term of Chi square for categories and t test for nominal variables. P value  $<0.05$  was considered significant.

**RESULTS**

The mean age of group A was  $25.2 \pm 3.3$  years and in group B was  $26.2 \pm 2.8$  years. The mean duration of pregnancy in group A was  $40.1 \pm 0.2$  weeks and in group B was  $40.2 \pm 0.1$  weeks (Table 1). Regarding spontaneous onset of labour, in group A, 38(21%) pregnant women underwent induced labour through membrane sweeping. In comparison Group B with no membrane sweeping done only 10(13.3%) went under spontaneous labour. The rest of the women from group A had 6 women with forceps delivery and 12 who went under caesarean (Table 2). The comparison of Group

A and Group B infection and bleeding rate showed that infection chances were insignificantly different in membrane sweeping group than the controls (Fig. 1).

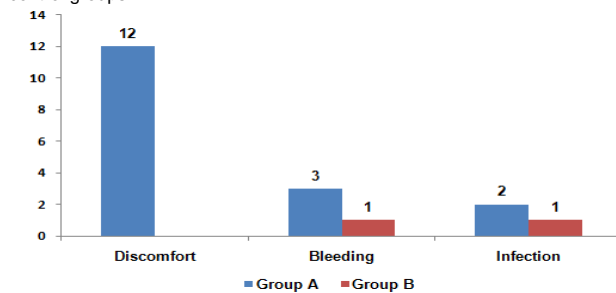
Table 1: Distribution of age between case and control groups

Age (years)	Group A	Group B
18-24	43(57.3)	44(58%)
25 - 30	19(25.3%)	16(21.3%)
> 30	13(17.3%)	15(20%)

Table 2: Comparison of delivery complications between cases and controls

Complications	Group A	Group B	P value
Rupture of membrane	38 (50.6%)	25 (33.3%)	0.051
Forceps delivery	6(8%)	4(5.3%)	0.09
Vacuum delivery	2(2.6%)	-	0.003
Normal delivery	17(22.6%)	21(28%)	0.075
C section	12 (16%)	25(33.3%)	0.04

Fig 1: Comparison of discomfort, bleeding and infection between cases and control groups.



## DISCUSSION

In the present study mean age of the pregnant women was around  $25.7 \pm 3.05$  years. International data suggests that pregnancy at earlier than 19 years or later than 35 years are more prone towards negative outcomes<sup>11,12</sup>. The average age appropriate for delivery is between 25-29 years<sup>13</sup>. Unfortunately in south eastern countries like Pakistan marriages are done at early ages as also noticed in current study population that majority of pregnant women were between 18-24 years bracket.

The success rate of delivery through membrane sweeping was documented as 50.6% which is a significant figure and lead to delivery without any complications. Various literatures<sup>14,15</sup> have reported in favor of membrane sweeping procedure leading to normal delivery, as can also be seen in present research where the number of caesarian cases decreases by almost half in comparison to group B where no membrane sweeping was done. This procedure also reduced post term pregnancy rates.

The negative affects reported through membrane sweeping involves discomfort or bleeding as also documented in this research. However, chances of infection are very low as presented in current study as well as elsewhere<sup>16</sup>. There are studies which also describe that membrane sweeping does not decrease the risk of other complication<sup>17-19</sup>.

Suganya and Edwin<sup>1</sup> also debate on low efficacy of membrane sweeping and elaborate higher risk of infection turnover through this mechanical procedure. The reason behind that could be the enrollment of those pregnant women who are already suffering from any previous

infection or are immune-compromised. As in this study and other international research did not reports any significant chances of infection in healthy pregnant women<sup>19</sup>.

**Conflict of interest:** Nil

## CONCLUSION

Membrane sweeping is a safe and efficacious procedure for inducing labour in women or more than 40 weeks of gestation.

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