

ACTIVE MANAGEMENT OF THIRD STAGE OF LABOUR

by

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The mechanism of separation and expulsion of the placenta has exercised the minds of clinicians for a great many years, for it is justly believed that until a clear understanding of this stage of labour is reached, its management cannot be perfected. For more than a century there has been a search for improvement in the management of the third stage.

In 1933, Brandt explained the mechanism of separation and expulsion of the placenta in detail. Andrews (1940) working independently described a similar method of expulsion of the placenta and obtained good results.

Those who have used Brandt-Andrews technique extensively and advocate its routine use are De Lee (1947), Picton (1951), Kimbell (1958), Greenhill (1960), Clyne (1963), Brews (1963), Donald (1964), Lewis (1964), Hibbard (1964) and Osmo Laitinen. Others favouring Brandt-Andrews method are Morris (1951) Elwin (1960), Fraser and Tatford (1961), Shaw (1949), Tritisch and Schneider (1945) and Johnstone (1949). Greenhill remarks that it is an excellent prophylactic against postpartum haemorrhage. Naidu *et al* (1955) described Brandt-Andrews method as safe, simple, and free from any danger of inversion.

Spencer (1962) has modified the

Brandt-Andrews method by combining it with an oxytocic given intravenously at the delivery of the anterior shoulder, and has replaced the term by "controlled cord traction."

For the clinical evaluation of Brandt-Andrews manoeuvre a total of 180 normal, full term pregnant patients (both primigravidae and multigravidae) were studied. On admission, after routine examination the blood pressure and haemoglobin were estimated. The time of expulsion of placenta, was noted and duration of third stage calculated. All blood loss after birth of the child was collected and measured accurately.

The patients were divided into 4 groups of 45 patients each with 30 multigravidae and 15 primigravidae. In the control group no oxytocic or Brandt-Andrews manoeuvre was attempted. In group II, Brandt-Andrews method alone was used, while in group III, I.M. ergometrine alone was given at the delivery of the anterior shoulder. In group IV, both I.V. ergometrine and active intervention in the form of Brandt-Andrews method was used.

To determine the benefits of the use of oxytocics and Brandt-Andrews method, a comparison has been made between group I (control group) and group II (Brandt-Andrews only) and between group I and group III (oxytocic only).

As compared to the control, Brandt-Andrews method has been found effective in reducing the duration of the third stage

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TABLE I

Shows the Duration of Third Stage and the Mean Blood Loss in Various Groups in Multigravidae and Primigravidae

Group	No. of Cases		Blood Loss		Duration	
	Primi	Multi.	Primi.	Multi.	Primi.	Multi.
I	15	30	189.2 ml.	181.4 ml.	7 min. 3 sec.	6 min 4 sec.
II	15	30	167.7 ml.	164.7 ml.	4 min. 1 sec.	3 min. 28 sec.
III	15	30	156.7 ml.	140.5 ml.	1 min. 53 sec.	5 min. 27 sec.
IV	15	30	106 ml.	86 ml.	3 min. 47 sec.	3 min. 5 sec.

of labour by 2 minutes 36 seconds in multigravidae and by 3 minutes 2 seconds in primigravidae (statistically significant at 5% level of significance) and the blood loss was reduced by 16.1 ml. and 21.5 ml., respectively.

In the control group the blood loss was 189.2 ml. in primigravidae and 181.4 ml. in multigravidae. It was reduced to 156.7 ml. and 140.5 ml., respectively when an oxytocic alone was used.

Comparing group II and III it was found that I.M. ergometrine reduced the blood loss by 24.2 ml. in multigravidae and by 10 ml. in primigravidae, while the duration of the third stage was reduced by 1 minutes 49 seconds when Brandt-Andrews method was used alone in multigravidae.

When the two types of active interventions were combined (modification of Brandt-Andrews method) there was a sudden drop in the blood loss from 189.2 ml. to 106 ml. in primigravidae and from 181.4 ml. to 86 ml. in multigravidae (statistically significant at 5% level of significance). There was also a significant shortening of third stage of labour from 7 minutes 3 seconds to 2 minutes 47 seconds in primigravidae and 6 minutes 4 seconds to 3 minutes 5 seconds in multigravidae.

Discussion

Calkins (1933) stated that the time

taken by the third stage is largely due to the phase of expulsion, for the phase of separation is complete very rapidly. Thus, the new approach to the management of the third stage is the immediate expulsion of the placenta by the Brandt-Andrews method with the adjunct of an oxytocic, after it has been separated. This is becoming a popular practice now a days. But it requires the skill and efficiency on the part of an obstetrician.

The average duration of third stage with Brandt-Andrews method was 3 minutes 28 seconds in multigravidae and 4 minutes 1 seconds in primigravidae, while Brandt-Andrews (1933) in his study on 800 cases found the average duration as 8 minutes, which is almost twice that in this study. This may be because of the inclusion of 3 cases of delayed third stage in Brandt's series.

Thus compared to the control, the Brandt-Andrews method is statistically significant in shortening the third stage of labour in both primigravidae and multigravidae, the former seemed to be benefited a little more than the latter.

I.M. ergometrine (0.5 mg) is in no way better than Brandt-Andrews method with regard to the shortening of the third stage of labour, as noted in the present series. This is probably because the oxytocics facilitate the phase of separation of the placenta and do not affect the phase of expulsion of the placenta which is the

time consuming phase (Calkins 1933) and hence the duration of third stage is not altered. On the other hand, Brandt-Andrews method by hastening the phase of expulsion shortens the third stage and thereby reduces the blood loss also.

Stearns (1963), using modified Brandt-Andrews method found the average duration of third stage to be 2 minutes 56 seconds. Exactly the same duration of third stage is found in the present study, irrespective of parity.

I.V. ergometrine used with Brandt-Andrews method has been found more effective in primigravidae than in multigravidae as far as the duration is concerned, which is reduced from 7 minutes 3 seconds to 2 minutes 47 seconds in the former and from 6 minutes 4 seconds to 3 minutes 5 seconds in the latter.

I.M. ergometrine alone is beneficial in reducing the amount of blood loss both in multigravidae and primigravidae, the effect being a little more in the former. A similar observation was made by Kishor (1960-61) and Bose (1955). Spencer (1962) using modified Brandt-Andrews method found an average blood loss of 90 ml. which can be compared with 92.6 ml. in the present series, irrespective of parity.

Taking 14 oz. (420 cc) and above as postpartum haemorrhage, the incidence in the control group of this series was 6.6%. The reduction in the incidence of post-partum haemorrhage to 4.4% was observed with the practice of Brandt-Andrews manoeuvre, a mechanical means of encouraging the expulsion of placenta. Spencer (1962) Rowe (1962) found a very low incidence of postpartum haemorrhage (1.2%) with I.V. ergometrine, but no case of postpartum haemorrhage occurred in the present series.

Manual removal of the placenta was

not encountered in any of the control cases and those in which Brandt-Andrews method was used alone. However, a manual removal rate of 2.2% occurred in this series with controlled cord traction (I.V. ergometrine and Brandt-Andrews method). No case required manual removal of the placenta when ergometrine was given intramuscularly.

Conclusion

A statistically significant shortening in the duration of the third stage has been found in both parity groups when Brandt-Andrews method was used alone.

A further shortening of the third stage of labour to 2 minutes 56 seconds was found when the Brandt-Andrews manoeuvre was combined with I.V. ergometrine.

The Brandt-Andrews method used alone reduced the average blood loss by 20.6 ml. but its effect was enhanced when combined with I.V. ergometrine, the blood loss being 92.6 ml. only.

In countries like India where majority of women are anaemic and many severely so, this method is of value to prevent the blood loss which these patients can ill afford.

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