CHEMICAL MANIPULATION OF DELAYED PARTURITION IN CAPTIVE ASIATIC ELEPHANT AT MYSORE ZOO

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Introduction

Elephas maximus is the largest living mammals having a wide range of habitat from rain forest to Himalayan tract. Sexual maturity in bulls is reached around 15 years of age and in cows around 12 years. Gestation period is eighteen to twenty two months and there is only one calf at birth, rarely twins. Intercalving period varies from two to four years, which means that a female Indian Elephant living a full span can bring nearly 12 to 15 Elephants into this world.

Birth of young one is generally quick inspite of the size of the foetus. A new born calf measures 0.90 m tall and weighs around 55 to 60 kg. Lactation continues for months after the young begins to eat grass. Parental supervision continues for some years after the young animal is entirely able to feed itself.

Parturition with anterior presentation is most common among the mammals. Sometimes because of the abnormalities positioning of the foetus may result in dystocia. One such case has been recorded at Mysore Zoo on 29 May 1970. The Cow Elephant Padmavathi had the dystocia and could not expel the foetus which resulted in marathon caesarean operation. The dead foetus was removed but the Cow Elephant could not survive for more than 19 hours.

Case History

Cow Elephant Gajalaxmi aged around 17 years born in captivity on 18 May 1979 at Mysore Zoo was sired by tusker Jayaprakash on 15 and 16 of April 1995, received from Bandipur Range on breeding loan basis, which resulted in conception and normal gestation period. On 29 Nov. 1996 symptoms of parturition were observed, but because of the weak uterine contractions, could not expel the foetus. Hence assisted delivery was conducted which resulted in the delivery of a female calf with anterior presentation.

Case Report

The Cow Elephant Gajalaxmi had the normal gestation of about 18 months. On the morning of 29 Nov. 1996 around 7.30 A.M. symptoms of parturition were noticed. Frequent micturition, mild uterine contractions with the appearance of amniotic sac in the birth canal which gave a bulge like appearance between the two thighs was noticed. Animal was restless and showed excitement with intermittent sternal and lateral recumbency.

There was not much progress in the process of parturition till 11.50 A.M. Because of the warm day, excitement and stress the

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animal was getting exhausted but no active uterine contractions were noticed.

To avoid exhaustion, mahouts were asked to provide sufficient water for the animal to drink. But it took only about 20 litres of it and intermittently it was taking reed grass and hay.

For the benefit of giving psychological support to the inexperienced Gajalaxmi, (Cow Elephant in labour) her mother Padmavathi was brought closer to it. Interestingly, the mother Elephant Padmavathi took lot of interest by taking the smell of the secretions coming out of the birth canal and it was feeling the bulge of the amniotic sac. This type of her behaviour was may be because of her past experience and she was moving all the time with her daughter Gajalaxmi giving her moral support.

Following observations were recorded during the parturition :

7.30 A.M. - Symptoms of parturition noticed. Frequent micturition with mild uterine contractions noticed, appearance of amniotic sac in the birth canal.
11.23 A.M. - It stretched its hind limbs laterally with mild uterine contractions, amniotic sac in the birth canal was seen.
11.46 A.M., 11.48 A.M., 11.50 A.M., 11.53 A.M.and 11.57 A.M. - Mild uterine contractions were noticed at the intervals of two, two, three and four minutes.
12.00 Noon - One bucket of water was provided which it took completely.
12.15 P.M. - Pressing of the birth canal by the hind limbs and micturition noticed.
12.17 P.M., 12.20 P.M. and 12.23 P.M. - Mild uterine contractions noticed.
12.25 P.M. - Animal went to sternal recumbency and laid down.
12.27 P.M.- Cow Elephant got up again.
12.33 P.M., 12.35 P.M. and 12.38 P.M. - Stretching of hind limbs laterally with mild uterine contractions noticed.

Even after five hours of the parturition process the Cow Elephant could not expel the foetus. Symptoms like micturition, stretching and bending of hind quarters with mild uterine contractions were noticed intermittently but it did not help much to bring the foetus out. It is probably due to lack of strong uterine contractions. At the end of five hours of efforts to expel the foetus only the amniotic sac just appeared into the birth canal giving a bulge like appearance but it did not descend down. The animal had lot of excitement and was getting exhausted due to parturition stress.

In order to provide relief to the animal and to induce strong uterine contractions efforts were made to administer Dextrose 5% intravenously through the ear vein and Oxytocin 0.5% vol/wt/ml was injected intramuscularly at 12.40 P.M. (Fig. 1). However Dextrose IV could not be given more than 100 ml as the animal got up and did not obey the command to lie down.

The said medication helped to bring strong uterine contractions with the stretching of the hind limbs laterally, bending its hind quarters as follows :

12.50 P.M. - Uterine contractions seen with greater intensity.
12.53 P.M. - Uterine contractions followed by sternal recumbency.
12.54 P.M. - Got up and had strong uterine contractions.
12.56 P.M. - Strong uterine contractions and pressing of the birth canal with

Fig. 1

hind limbs noticed.

1.00 P.M. - Water bag started descending down the birth canal.

1.02 P.M.- Animal went on sternal recumbency and then to lateral recumbency. Animal got up again and for the first time water bag could be seen partially appearing outside the birth canal.

1.04 P.M.- Portion of the water bag which appeared could be seen hanging ruptured due to the tail movements resulting in the expelling of the amniotic fluid and the animal showed lot of excitement (Fig. 2).

1.06 P.M. - Dusting on the body noticed.

1.16 P.M. - Dusting on the body, it stood without any movements, seen at its ease.

1.22 P.M. - Dusting on the body continued.

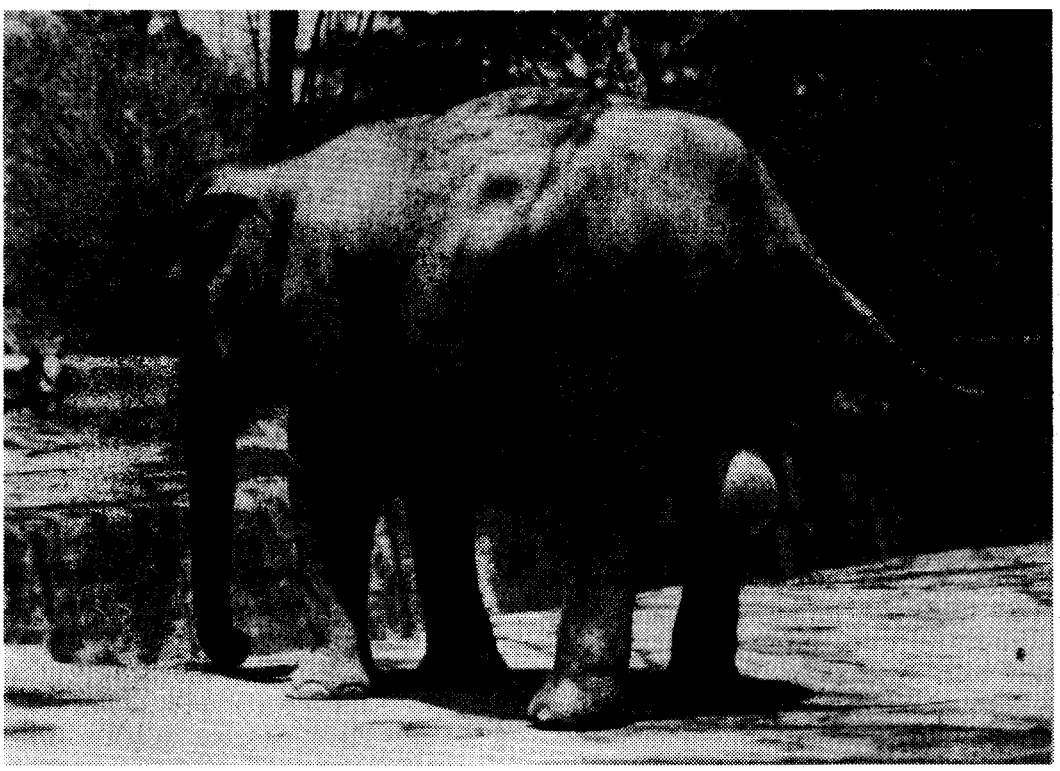
1.36 P.M. - The tethered Cow Elephant was unchained and was allowed to move freely within the enclosure.

1.50 P.M. - Went to lateral recumbency for a minute and got up again.

After the rupture of amniotic sac and expulsion of fluid the animal did not show any symptoms of uterine contractions or expel any lotia till 2.14 P.M.

2.15 P.M. - Mild uterine contractions noticed with stretching of hind limbs.

Fig. 2



2.17 P.M. - Dusting on the body noticed.
2.19 P.M. - Mild uterine contractions, restlessness noticed.
2.21 P.M. - Went to sternal recumbency for a minute and got up.
2.22 P.M. - Mild uterine contractions noticed.

From 2.22 P.M. to 3.25 P.M. the animal was found completely relaxed and no uterine contractions were noticed. It was found moving within the enclosure along with its mother Padmavathi.

3.43 P.M. - Mild uterine contractions noticed and the animal took one bucket of water.
3.52 P.M. - Mild uterine contractions with urination and restlessness noticed.
4.35 P.M. - Animal was taken to lateral recumbency and made per-rectal examination, could able to palpate foetus frontal region but could not able to differentiate the foetus trunk during the palpation.
4.43 P.M. - Animal was taken to right lateral recumbency and through ear vein 20 ml Oxytocin 0.5% vol/wt/ml dissolved in 500 ml DNS was infused. Mahouts were asked to hold ear to avoid ear flapping but suddenly Elephant got up but infusion was continued. A mahout was able to sit on the back holding DNS bottle and infusion set intact. It worked out very well and full quantity of 500

ml DNS along with 20 ml of Oxytocin could be infused intravenously.

4.49 P.M. - Stretched its hind limbs with uterine contractions.

4.50 P.M. - Contractions noticed again with urination.

4.53 P.M. - Strong uterine contractions seen stretching both the hind limbs and bending its hind quarters.

4.57 P.M. - Strong uterine contractions noticed.

5.02 P.M. - Very strong uterine contractions noticed, stretching its hind quarters and right hind limb.

5.03 P.M. - Strong contractions repeated.

5.06 P.M. - Strong uterine contractions noticed and the foetus was pushed into the birth canal and the bridge was very clear between limbs and anal opening.

5.08 P.M. - Strong uterine contractions with foetus descending down the birth canal its anterior presentation.

5.09 P.M. - Animal has strong uterine contractions, bending its hind quarters and delivered the calf. Immediately afterwards Gajalaxmi getting relieved showed full excitement and ran to its mother Padmavathi as if to give the message of delivery of the calf. Padmavathi joined her and returned to the spot where the calf was lying and made observations by extending their trunks to sniff the smell with their ears stretched, tail raised, pounding the ground with their limbs, showing full excitement and producing vocal sounds characteristic to the Elephants during the exciting moments (Fig. 3).

5.13 P.M. - The calf showed the movements of trunk, eyelids and head and it was found to be breathing.

5.15 P.M. - Head and body movements of the new born calf were noticed.

Both Gajalaxmi and Padmavathi were at the zenith of excitement going closer to the calf and trumpeting and walking to and fro from the calf with frequent trumpeting.

Neonatal care by mother Gajalaxmi

5.24 P.M. - The Cow Elephant went near the calf but did not feel the calf with its trunk but appeared to observe the calf from very close range.

5.28 P.M. - The mother came closer to the calf to giving support with its forelimbs to enable the calf to be on its feet.

5.32 P.M. - The mother was found spreading the hay and paddy straw on the body of the calf with its trunk.

5.34 P.M. - The calf stretched its hind limbs laterally and tried to take sternal position.

5.38 P.M. - Cow Elephant started eating hay and paddy straw.

5.52 P.M. - The calf passed the first stools (Muconium) which weighed about 500 gm.

5.58 P.M. - The mother was very close to the calf and for the first time it could touch the calf with its trunk.

6.15 P.M. - Recorded pulse of the calf 72 per minute, respirations 26 per minute and body temperature 36° Celsius.

6.25 P.M. - Mahouts assisted the calf to take sternal position and to make it to get up on its limbs.

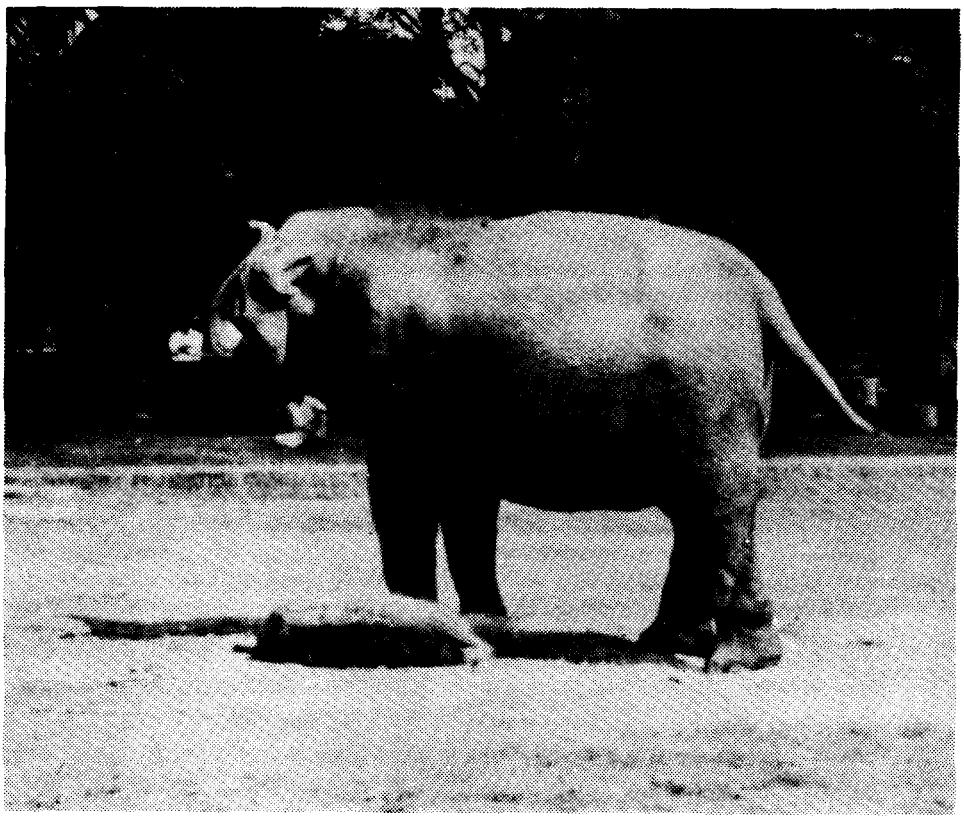
6.34 P.M. - The calf stood on its limbs for the first time and tried to go near the mother (seefront cover).

7.00 P.M. - The calf started moving between the forelimbs searching for the teats to suckle, mother was supporting the calf.

7.18 P.M. - The calf was successful in taking the teat into the mouth and started suckling.

7.39 P.M. - The calf was found suckling and the mother was supporting the calf with its forelimbs.

Fig. 3



9.53 P.M. - The mother and the calf were shifted to the safer place and necessary instructions were given to the night staff to make observations during the night regarding the feeding behaviour of the calf. Later it was reported that the calf suckled atleast twelve times with regular intervals between 10.00 P.M. and 10.00 A.M.

Results

Cow Elephant Gajalaxmi aged about 17 years born in captivity at Mysore Zoo conceived successfully sired by Jayaprakash, tusker aged about 30 years, had normal gestation period of about 18 months. Parturition process got delayed because of the partial uterine inertia that was successfully treated with 20 ml of Oxytocin 0.5% vol/wt intravenously along with 500 ml of Dextrose 5%. The above said medication gave a very good response creating sufficiently strong uterine contractions at regular intervals resulting in delivery of the calf within 16 minutes from time of initiation of Oxytocin infusion.

Salzert (1982) mentions a still born calf was delivered after treatment with Oxytocin (20 ml IV and 40 ml IM).

Conclusion

Dystocia stillbirths and uterine inertia in Elephants have generated numerous

reports in the literature suggesting a wide occurrence. Problems of uterine inertia could successfully be treated with Oxytocin 0.5% vol/wt/ml using 20ml IV and about 20-30ml IM results in creation of strong uterine contractions at regular intervals which helps in the expulsion of the foetus.

The details mentioned in the above case report very well suggest the advantage of using Oxytocin for the assisted parturition in the cases of uterine inertia.

SUMMARY

Parturition with anterior presentation is most common among the mammals: Sometimes because of abnormalities, positioning of the foetus may result in dystocia. A case of cow Elephant of Mysore Zoo whose parturition process got delayed because of the partial uterine inertia treated with 20 ml of Oxytocin 0.5% vol/wt intravenously with 500 ml of Dextrose 5% gave good response.

मैसूर प्राण्यालय में बंदी एशियाई हाथी की विलम्ब प्रसूति का रासायनिक उपचार करना

आर० राजू, बी०एस० गोपालराव, एस०एम० खादरी व डी० आशा

सारांश

स्तनियों में बच्चों का उन्टा हो जाना सबसे ज्यादा आम बात है। कभी-कभी भ्रूण की स्थिति में असाधारणताएं होने से डायसटोसिया हो जाता है। मैसूर प्राण्यालय की एक हथिनी का वर्णन दिया गया है जिसका गर्भाशय अंशतः जड़ हो जाने से बच्चा होने में विलम्ब हो रहा था और उपचार 20 मिलि० ऑक्ससीटोसिन 0.5% आयतन/भार के साथ 500 मिली० डेक्सर्टोस 5% नस में अंतःक्षिप्त करके किया गया और उसका प्रतिचार अच्छा हुआ था।

Reference

Salzert (1982). *Medical Management of the Elephants* , Indira Publishing House, West Bloomfield, Michigan.