

GENERALISED VACCINIA IN THE NEW BORN

by

K. KOCHHAR, M.B.B.S., D.G.O. (Bom.), M.D. (Madras)

The outbreak of small pox in U.P. (1967) resulted in mass vaccination in Jhansi Cantonment including the pregnant cases.

Very few cases of foetal involvement resulting from intrauterine infection with vaccinia virus have been reported. Foetal vaccinia was first described by Lynch (1932) in the United States. He reviewed previously published reports and found no earlier authentic cases. However, since then 14 cases have been recorded. Most of the reported cases of foetal vaccinia have been attributed to vaccination during small pox epidemics. Primary vaccination was responsible for nine cases, in three cases re-vaccination and in three cases the type of vaccination was not reported. Congenital vaccinia has not been reported in a pregnant woman with a previous history of successful vaccination. The present case is being reported with this rare complication ending fatally.

Case Report

Mrs. S., 25 years old woman, 2nd gravida, 36-38 weeks' pregnant was admitted on 4th April 1967 with history of mild pains. She had had one full term delivery 2 years ago. There was no history of any febrile illness, she was vaccinated about 3 weeks ago (successful re-vaccination).

On Examination

She was found to be in good health and there was no evidence of anaemia or toxæmia. Blood pressure was 120/70 mm of Hg.

Reader in Obst. & Gynec., Armed Forces Medical College, Poona.

Received for publication on 20-3-1971.

Temperature was normal. Systemic examination did not reveal any abnormality. The uterus was about 36-38 weeks in size, vertex presenting at the brim and foetal heart sounds were audible. The same evening the patient complained of sudden cessation of foetal movements but on examination foetal heart sounds were audible and she was reassured.

Three days later she went into labour and delivered spontaneously a male asphyxiated baby. The baby had characteristic umbilicated lesions on the face and a few scattered on the body and extremities. There was no rash on the palms and soles. The baby died 12 hours after birth. (Fig. 1).

The scrapings from the skin lesion were positive for inclusion bodies.

The placenta showed irregular areas of necrosis, yellowish white in colour.

Discussion

Several studies have been conducted to find out whether or not small pox vaccination of expectant mothers exerts a harmful influence on the foetus, Urner (1927) was of the opinion that vaccination in pregnancy had no injurious effects on the mother or infants.

Ellows *et al* (1929) from a study of 893 pregnant women, 720 of whom were vaccinated and 173 unvaccinated, considered that small pox vaccination during pregnancy did not increase the incidence of congenital abnormalities, stillbirths or death of the infant.

Greenberg *et al* (1949) observed 4172 women vaccinated in the 1st trimester of pregnancy and stated that vaccination did not exert any deleterious effect on the developing embryo. Mac Arthur (1953)

Reported Cases of Foetal Vaccinia

References	Type of vaccination	Stage of pregnancy (weeks)	Interval between vaccination and delivery (weeks)	State of foetus	
Lynch (1932)	.. Not stated	24 weeks	4	alive	died
Mac Donad and Mac Arthur (1953)	Primacy	12 weeks	11	dead	
Wiersum (1956)	.. Re-vaccination	21-24 weeks	6	dead	
Wielenga et al (1961)	.. Primary	18 weeks	9	alive	died
Tucker and Sibson (1962)	.. Primary	13 weeks	9	dead	
Entwistle (1962)	.. Primary	19 weeks	4	dead	
Kropholler and Voorhoeve (1962)	.. Primary	15 weeks	7	dead	
Friart (1963)	.. Primary	24 weeks	8	alive	died
Hood and Mckinnon (1963)	.. Not stated	14 weeks	8	dead	
Killpack (1963)	.. Re-vaccination	16 weeks	8	dead	
Lycke et al (1963)	.. Primary	26	5	alive	died
Naidoo and Hirsch (1963)	.. Primary	22	8	alive	died
Tendury and Foukas (1964)	.. Re-vaccination	12	8	dead	
Green et al (1966)	.. Primary	24 weeks	6	dead	

described a case of congenital vaccinia following re-vaccination.

Bieniarz & Debrowski (1956) compared the outcome of pregnancy in 1270 vaccinated with 3515 unvaccinated pregnant women, and showed that the incidence of abortion in women vaccinated upto 16 weeks was higher than in the control group.

Vaccinial reactions were recorded by Mac Donald and Mac Arthur (1953), Tucker & Sibson (1962), Entwistle *et al* (1962), Naidoo (1963), Green & Reid (1966). It has been suggested that though there is viraemia during vaccination the foetus is not affected (Dixon 1962) but, an occasional case of vaccinia does occur. It seems to be agreed that there may be some risk to the foetus if vaccination to the mother is carried out in the first trimester of pregnancy and it should be avoided. Apparently the virus takes 24-48 hours to cross the placenta and infect the foetus and a further 10-12 days are required for incubation in the foetus.

If infection took place late in pregnancy and the infant survived, the rash would

appear in the neonate after the requisite 10-12 days.

Summary

An unusual case of an infant with prenatal vaccinia is described. The mother was 34 weeks pregnant when re-vaccination was done during an epidemic of small pox and the baby was born with characteristic umbilicated lesions and maculopapular rash over the body and died after 12 hours. Diagnosis was established by presence of inclusion bodies from the skin lesion.

Acknowledgement

I wish to thank Lt Col S. D. Khanna, Professor Armed Forces Medical College, Poona, for his guidance and suggestion in preparing the paper; my thanks to Lt Col G. S. Kochhar (Pathologist Military Hospital, Jhansi) for his help in managing the case.

References

1. Bellows, M. T.: Publ. Hlth. Ref. (Wash), 64: 319, 1929.

2. Bienniarz, S. and Debrow Ski, E.: Am. J. Obst. & Gynec. 57: 242, 1956.
3. Dixon, C. W.: Brit. Med. J. 1: 12, 1962.
4. Entwistle, D. M. and Bray, P. T.: Brit. Med. J. ii: 238, 1962.
5. Friart, G. M.: Archs. belg. Derm. Symp. 19: 191, 1963.
6. Green, D. M. and Reid, S. M.: Lancet 1: 1296, 1966.
7. Greenberg, M.: Pediatrics. 3: 456, 1949.
8. Hood, C. K. and Mckinnon, G. G.: Am. J. Obst. & Gynec. 85: 238, 1963.
9. Killpack, W. S.: Lancet, 1: 388, 1963.
10. Kropholler, R. W. and Voorhoeved, J.: Ned. Tijd Schr. Geneesk 106: 2276, 1962.
11. Lycke, E.: Acta Path. Microbiol. Scand. 57: 287, 1963.
12. Lynch, K. W.: Arch. Derm. Syph., 26: 997, 1932.
13. Mac Arthur, P.: Lancet ii: 1104, 1952.
14. Mac Donald, A. M. and Mac Arthur, P.: Archs. Dis. Child. 28: 311, 1953.
15. Naidoo, P.: Lancet 1: 196, 1963.
16. Tondury, G. and Foukas, M.: Pathologia, Microbiol. 27: 602, 1964.
17. Tucker, S. M. and Sibson, D. G.: Brit. Med. J. 11: 237, 1962.
18. Urner, E.: J. Am. Med. Assn. 102: 360, 1927.
19. Wielenga, G., et al.: Lancet 1: 258, 1961.
20. Wiersum, A. K.: Ned Tijdschr. Geneesk. 100: 971, 1956.

See Fig. on Art Paper IV