CYCLOPS IN LARGE WHITE YORKSHIRE PIGS

S.M.K. KARTHICKEYAN[1]*, J. RAMESH[2], A. GOPINATHAN[2] AND S.N. SIVASELVAM[3]

Livestock Research Station, Kattupakkam – 603 203, Tamil Nadu, India

Received : 12.04.2011

ABSTRACT

Accepted : 29.12.2011

A peculiar condition called Cyclops was observed in two different Large White Yorkshire piglets, which had varying features and there was no involvement of boar since they were from different sire groups.

Key words: Cyclops, Large White Yorkshire, pigs, India

CASE HISTROY AND OBSERVATION

A 15-month old Large White Yorkshire sow belonging to the Pig Breeding Unit of Livestock Research Station, Kattupakkam, Tamilnadu, had given birth to nine stillborn piglets in its first farrowing in the month of July, 2008. Out of these piglets, a dead male piglet had the features of 'Cyclops' which weighed 1.78 kg. This Cyclops, otherwise called cebocephalus, was characterized by a single orbit in the centre of the forehead (Fig. 1), in which global tissue was absent or rudimentary. Eyelids were absent and the nose was in the form of a tubular appendage placed above the centrally located eye. This appendage was a fleshy part without any cartilaginous structure. The skull was small, elongated and the lower jaw longer than upper jaw. A rudimentary projection was noticed above the mouth. Ascites and fluid-filled scrotal sacs were also observed.

Another Large White Yorkshire sow aged four years, belonging to the farm had farrowed a piglet featuring Cyclops, along with ten number of live piglets in its sixth farrowing or parity. This non-viable piglet weighing 1.4 kg, had protruded tongue from the abnormally formed mouth, as evidently different from snout (Fig 2). A rudimentary projection was present above the protruded tongue. There was no eye; but two depressions were noticed in place of eye socket on either side of the rudimentary projection. The ears were normal. A mild lacerated wound was present in the centre of forehead. All other parts of the body were appearing normal. This Cyclopic piglet was different from the previous one; but with varying features.

In both piglets, the internal organs were found to be normal and intact. Further, it became clear that there was no involvement of boar in these two Cyclopia as they were from different pedigree.

TREATMENT AND DISCUSSION

The variations observed in two Cyclops cases were concurrent with the report of Chidester (1923) who opined that all gradations from a single median eye to an hour-glass eye and finally two eyes close together were classified as of the Cyclopean order. Further, the appearance of nose as tubular appendage was also reported as most frequently accompanying Cyclopia as nasal proboscis. It was reported that the mammalian Cyclops did not live on account of inability to breathe. The fleshy part of the nose lacked cartilaginous tissue formation which was prevented by the median eye from assuming its normal position.

A similar condition was reported in a piglet, born in China (Xenophilia, 2008) with a monkey's face, with two thin lips, a small nose and two big eyes. Another cyclopic variant piglet was also reported (Online News, 2008) in china with two mouths, two noses and three eyes. The cause for cyclopia was thought to be a genetic

[1]*Associate Professor,* [2]*Assistant Professor,*
[3]*Professor, Dept. of Animal Genetics and Breeding,*
[2]*Assistant Professor, Dept. of Animal Nutrition,*
Madras Veterinary College, Chennai- 600 007
**Corresponding author, e-mail*
kannikarthi@yahoo.co.in

alteration due to environmental exposure to certain chemicals, before the optic vesicles are pushed out during embroygenesis. It is quite apparent that these Cyclops resulted from failure in the development of the axis of the skull to a greater or lesser extent as reported by many authors (Chidester, 1923; Ferrand *et* al., 2007). It has been identified by Chiang *et al.* (1996) that the lack of Sonic Hedgehog gene function played a major role in causing neurological malformation (Holoproencephaly) such as Cyclopia and defective axial patterning in mice.

REFERENCES

Chidester, F.E. (1923). The Origin of Cyclopean Monster. *The American Naturalist*, **57** (653): 496-518.

Chiang, C., Litingtung, Y., Lee, E.,. Young, K.E., Corden, J.L., Westphal, H. and Beachy, P.A. (1996). Cyclopia and defective axial patterning in mice lacking sonic hedgehog gene function, *Nature,* **383**:407 - 413

Ferrand, N., Demange, C., Prunier, C., Ryeon Seo, S. and Atfi, A. (2007). A mechanism for mutational inactivation of the homeodomain protein TGIF in holoprosencephaly. *The FASEB J.*, **21**:488-496

Online News. (2008). www.dailymail.co.uk/news/article-509688/meet-little=piglet-cyclops-style-extra-eye-mouths-noses.html. Mail dated 22 January, 2008.

Xenophilia, (2008). A piglet with monkey's face. http:// xenophilius.wordpress.com/2008/ 07/26/piglet-with-monkeys-face/

Fig. 1. A typical cyclopic piglet with single orbit in the centre of forehead and nose in the form of a tubular appendage

Fig. 2. A cyclopic piglet with protruded tongue without orbit