

OSTEODYSTROPHY FIBROSA IN PIG IN IRAN

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INTRODUCTION

Osteodystrophy Fibrosa is an alteration in bone, characterized by a decrease in the amount of osseous tissue and an increase in the amount of white fibrous connective tissue (3 & 7).

Renal disease, parathyroid hyperplasia or neoplasia, vitamin D and calcium deficiencies or high phosphorus diet arise osteodystrophy fibrosa (1 & 6).

The object of this communication is to report a case of osteodystrophy fibrosa in pig in Iran caused by a sudden drop of calcium and dependent increase in the amount of phosphorus in the diet.

THE SUBJECT

In April 10, 1972, a one – year – old dyspneic pig, from a flock of 1800, was brought from Babol, a town in the North of Iran, to the Pathology Department of Razi Institute for diagnosis purposes.

Clinical Signs

The pig had some trouble in breathing for about three weeks before it was taken to the Department. The animal exhibited signs of dyspnea and snored continuously. The muzzle was swollen, the nasal bones was extended at each side and the animal was breathing with difficulty through the open mouth (Fig. 1).

There was no elevation in body temperature.

Gross Pathological Findings

The animal was slaughtered in chocking condition and necropsy was performed immediately. There was no prominent change in the internal organs. The consistency of turbinate and nasal bones were altered. The nasal cavities were almost occluded by a rubbery and semi solid greyish tissue extending from turbinate bones. The same type of aggressive tissue was extended through the upper jaw, palate, and gums (Fig. 2).

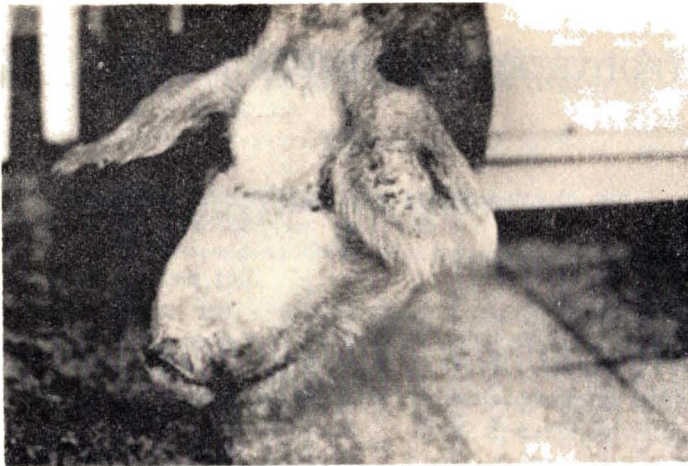


Fig. 1 = Note the extension of nasal bones.

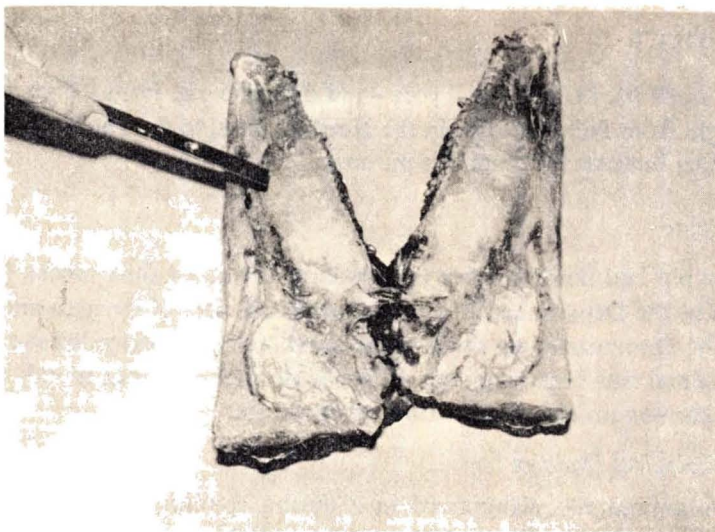


Fig. 2 = Note the occlusion of nasal cavities.

Histopathological changes

Some typical changes of osteodystrophy fibrosa could be seen in sections, prepared from palate, nasal, turbinate, and the surrounding bones (4,5 & 9).

A progressive destruction of old bone by osteoclasts and replacement by thin trabecular of poorly mineralized new bone bordered by rows of osteoblasts, trabecular of hyalin and replacement of marrow spaces by fibrous tissue were prominently noted in all sections (Fig. 3,4).

DISCUSSION

Subsequent field investigation revealed that there were three other one - year - old dyspneic pigs and 8 rachitic piglets in the flock. Pigs were fed during the winter time with low quality rice - brawn containing 0.145% calcium and 0.581% phosphorus.

The same above-mentioned macroscopic and microscopic findings were also noted in the latter dyspneic pigs, slaughtered on the field.

After the food diet was changed, the disease did not progress in the dyspneic pigs and rachitic piglets were cured, and no new case of the same disease was reported.

As the field trial confirmed the histopathological diagnosis, it sees that the main cause of the disease was sudden decrease in the amount of calcium and phosphorus in food supply. The ratio of calcium and phosphorus in this poor diet was 1 to 5, while in a normal diet this ratio is between 1 or 2 to 1 (8 & 2).

SUMMARY

A case of osteodystrophy fibrosa in pig in Iran was diagnosed histopathologically and the cause of the disease was assumed to be the poor diet supply of calcium and phosphorus and unbalanced ratio between these two ingredients.

ACKNOWLEDGEMENT

The authors are indebted to Professor D.R. Cordy, University of California, Davis, California, USA, for his cooperation in the histological studies as well as to the Biochemistry Department of Razi Institute for the chemical analysis of food materials.

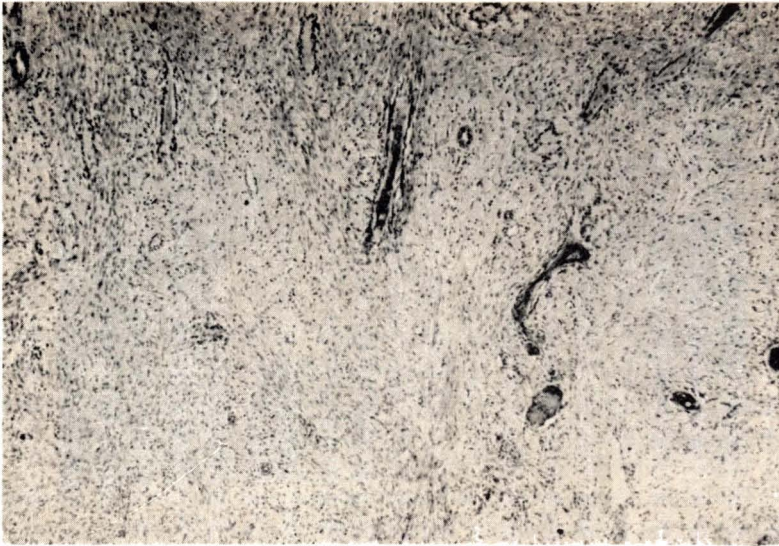


Fig. 3 = Section from turbinate bone. Note bone tissue has been replaced by white fibrous connective tissue X 40.

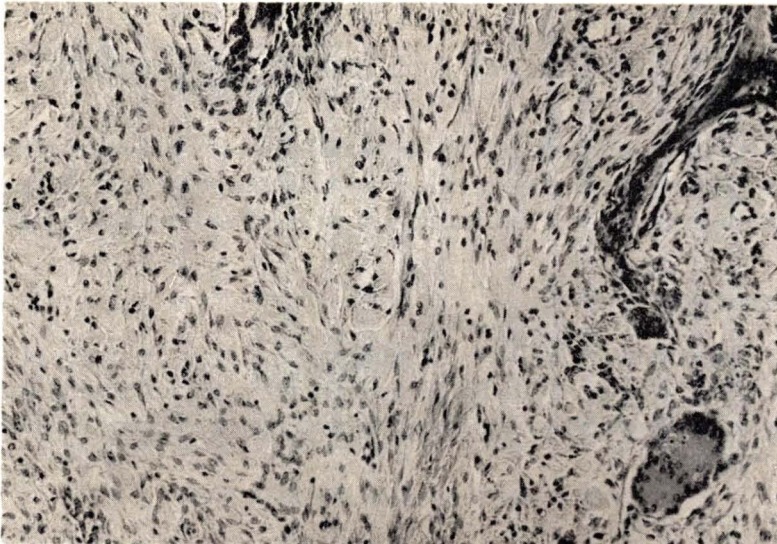


Fig. 4 = Higher magnification of Fig. 3 X 125.

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