Dermal Squamous Cell Carcinoma in a Laying Hen

Masahiro SUGIYAMA, Hisarou YAMASHINA, Takahito KANBARA, Hiroshi KAJIGAYA, Katsutoshi KONAGAYA¹⁾, Masaki UMEDA, Masae ISODA, and Toshio SAKAI²⁾

Department of Veterinary Pathology, ¹⁾Department of Physiological Chemistry, Nippon Veterinary and Zootechnical College, Musashino, Tokyo 180, and ²⁾Sakai Domestic Fowls Laboratory, Tomisato, Chiba 280-02, Japan

Received 20 March 1987/Accepted 3 September 1987)

Jpn. J. Vet. Sci. 49(6): 1129-1130, 1987

KEY WORDS: derma, laying chicken, squamous cell carcinoma.

Dermal squamous cell carcinoma in chickens appears rarely [2, 3] and restricted to relatively in aged birds [3], and occurs on the scaly skin of the lower legs and claws [2, 3] or on the skin of the neck and other sites [1, 4, 5]. Recently, Turnquest [6] examined a number of young chickens at some poultry processing plants in the United States and found squamous cell carcinoma at the rate of 2 to 10,000 chickens slaughtered. He noticed that the carcinoma with ulcer developed everywhere on the body surface. Moreover, he anticipated that it might be increasing gradually in incidence.

This note describes pathological findings of a squamous cell carcinoma occurred in a 204-day-old laying hen, weighing 1.55 kg.

The affected hen appeared among 3,000 birds raised in cages set in an open chicken house. At 180 days of age, tumor nodes were found at 4 sites of the body surface, on the left and right scapular regions and on the dorsal and ventral sides of the neck. On biopsy for histopathological examination the tumor was diagnosed as squamous cell carcinoma. After that, every tumor nodes increased gradually in size. At 204 days of age, the hen was sacrificed by bleeding from the heart and examined pathologically. On antemortem observation she revealed normal vigor and appetite and a moderate nutritional condition. No other birds with the carcinoma were seen in her flock although it was subjected to the all-out procedure at 600 days of age.

Macroscopically, the tumor nodes were 6.5×3.5 cm on the left scapular region, 12.3×7.8 cm on the right scapular region, 6.5×1.0 cm on the dorsal side of the neck, and 3.2×0.9 cm on the ventral side of the neck. They were reddish yellow-white, having some scattered tough spots, and protruded from the body surface. The cut surface of the nodes was generally flesh-colored, and that of the tough spots was dry and yellow-white.

All the tumor nodes were essentially the same in histological figures. The tumor cells revealed the morphology similar to prickly cells of the epidermis, and proliferated in the corium and subcutaneous tissue, forming irregular masses or cords of various size. The tumor nest was surrounded by abundant connective

Fig. 1 Tumor nodes (arrows) on left scapular region and ventral side of neck.

Fig. 2 Tumor cells forming a mass or cord, some with keratinized pearls. Cellular infiltration in stromal tissue. Hematoxylin and eosin (HE) stain. ×100.

Fig. 3 Intercellular bridges (arrows B) and mitotic figures (arrows M) in tumor lesions. HE. ×200.

Fig. 4. Electron micrograph of tumor cells. Intercellular desmosomes (arrows D) and intracytoplasmic tonomicrofibrils (arrows F) converging on desmosomes. $\times 13,400$.

tissue with many heterophils, lymphocytes and plasma cells. The tumor cells had eosinophilic cytoplasm and were various in shape, such as multangular, round, and irregular. There were distinct intercellular bridges between them. Their nuclei were round or elliptic in shape, had a distinct nuclear membrane, and contained 1 or 2 nucleoli. Mitotic figures were scattered in the lesions. Many keratinized pearls which were various in size, eosinophilic and lamellar or homogenous in structure, were formed at the center of tumor nests. Moreover, free keratinized cells and independent giant tumor cells were often recognized. There were no

significant changes in any other organs.

Electron microscopically, desmosomes were formed between tumor cells. The cells with desmosome had relatively many tonomicrofibrils in the cytoplasm. Some tonomicrofibrils converged on the desmosomes.

The present case was diagnosed as differentiated dermal squamous cell carcinoma. It was of interest to note that this tumor was not accompanied with any distinct ulcer and that it occurred on the scapular and cervical skin.

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要 約

採卵鶏の皮膚扁平上皮癌の1例（短報）：杉山公宏・山品恒郎・神原隆仁・梶ヶ谷博・小長谷勝利¹⁾・梅田昌樹・磯田政恵・坂井利夫²⁾（日本獣医畜産大学獣医病理学教室，¹⁾生理化学教室，²⁾坂井家禽研究所）——204日齢の採卵鶏の肩部と頸部に，体表部から膨隆しやや赤味を帯びた黄白色の大きさを異にした4個の腫瘍が認められ，病理組織学的に，鶏にはきわめてまれな皮膚扁平上皮癌の分化型と診断された。