

Periodic Acid Schiff (PAS) and Phosphotungstic Acid Hematoxylin (PTAH) Positive Materials in Cutaneous Type of Kaposi's Sarcoma

Masachika SENBA, Hideyo ITAKURA, Kan TORIYAMA
and Fukumu UZUTA

*Department of Pathology, Institute for Tropical Medicine,
Nagasaki University, Nagasaki, Japan*

Abstract: The authors found two cases of eosinophilic globules in the cutaneous type of Kaposi's sarcoma. The such globules were stained periodic acid Schiff (PAS), periodic acid Schiff (PAS) reagent after diastase digestion, and phosphotungstic acid hematoxylin (PTAH). As the results, these materials might be glycoproteins. Their shape were very similar to alpha-fetoprotein (AFP) globules of yolk sac tumor (endodermal sinus tumor) in the tissue of ovary and testicular.

Key words: Kaposi's sarcoma, alpha-fetoprotein like globules, acquired immune deficiency syndrome (AIDS).

INTRODUCTION

Kaposi's sarcoma (initially called a multiple idiopathic pigmented sarcoma of the skin, later called a multiple idiopathic hemorrhagic sarcoma) was first described by the Hungarian M. Kaposi (1872). The Kaposi's sarcoma usually appeared in the skin of lower extremities. Cutaneous type of Kaposi's sarcoma tends to spread rapidly, to involve many other skin sites, lymph nodes, lung, liver, intestine, or other viscera (Slavin *et al.*, 1970; Templeton, 1972; Hajdu, 1979; Safai *et al.*, 1980; McNutt *et al.*, 1983).

Recently the acquired immune deficiency syndrome (AIDS) is quite interesting disease (Centers for Disease Control, 1982; Reichert *et al.*, 1983). Of the 2008 cases of AIDS in the United State of America that were reported to the Centers for Disease Control (CDC) between June 1981 and August 8, 1983, the most common "marker" diseases have been *Pneumocystis carinii* (1016), Kaposi's sarcoma (533), or both (148) (Curran, 1983).

The authors found two cases of eosinophilic globules in the cutaneous type of Kaposi's sarcoma and its materials investigated by light microscopical technique.

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MATERIALS AND METHODS

Specimens were obtained twelve cases biopsy and resected human subjects at Rift Valley Provincial General Hospital in Kenya. For histopathologic study, the specimens were fixed in 10% formalin and embedded in paraffin. Sections were cut at 4 micron and stained with hematoxylin and eosin, periodic acid Schiff (PAS) (Schiff reagent: Merck, Art. 9033, Lot. 3125639) (Luna, 1960), periodic acid Schiff reagent after diastase digestion (α -amylase: Sigma, Bacterial Type II-A, No. A-6380, Lot. 41F-0095) (Luna, 1960), orcein (Orcein: Merck, Art. 9033, Lot. 8529084) (Senba, 1982), resorcin fuchsin (Rosaniline Hydrochloride: Tokyo Kasei, AKO 1) (Senba, 1982), silver impregnation (Senba, 1983), phosphotungstic acid hematoxylin (PTAH) (Luna, 1960), iron (Luna, 1960), periodic acid Schiff (PAS) reagent after trypsin digestion (Trypsin: Boehringer Mannheim GmbH, Lot. 1313153), periodic acid Schiff (PAS) after neuraminidase (Neuraminidase: Sigma, Purified Type V, No. N-2876, Lot. 15C-8180-1), and alpha-fetoprotein (AFP) by immunoperoxidase method (Alpha-fetoprotein: Orth, Histo-set, Lot. 073152).

RESULTS

Two cases of eosinophilic globules were found in the cutaneous type of Kaposi's sarcoma. Periodic acid Schiff (PAS), periodic acid Schiff (PAS) reagent after diastase digestion, periodic acid Schiff (PAS) reagent after trypsin digestion, periodic acid Schiff (PAS) reagent after neuraminidase digestion, and phosphotungstic acid hematoxylin (PTAH) stained such globules. By periodic acid Schiff (PAS), periodic acid Schiff (PAS) reagent after diastase digestion, periodic acid Schiff (PAS) reagent after trypsin digestion, and periodic acid Schiff (PAS) reagent after neuraminidase digestion, globules were stained red. By phosphotungstic acid hematoxylin (PTAH), globules were stained dark blue. Orcein, resorcin fuchsin, silver impregnation, and iron did not stain such globules.

DISCUSSION

The globules appeared in two cases of Kaposi's sarcoma and the these globules might be glycoproteins, because these materials positively stained periodic acid Schiff (PAS) and periodic acid Schiff after diastase digestion.

The these globules seem to see alpha-fetoprotein (AFP) like materials. However, we did not detect alpha-fetoprotein (AFP) by immunoperoxidase technique.

Alpha-fetoprotein (AFP) globules of yolk sac tumor (endodermal sinus tumor) in

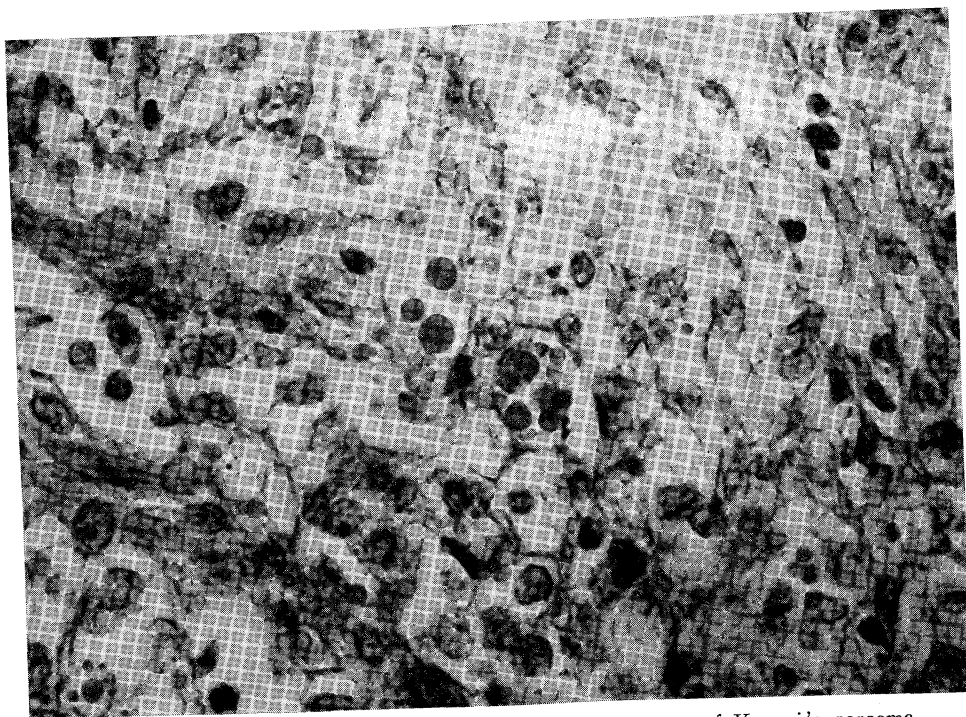


Fig. 1. Glycoprotein globules are seen in the cutaneous type of Kaposi's sarcoma. Periodic acid Schiff (PAS) stain, original magnification X400.

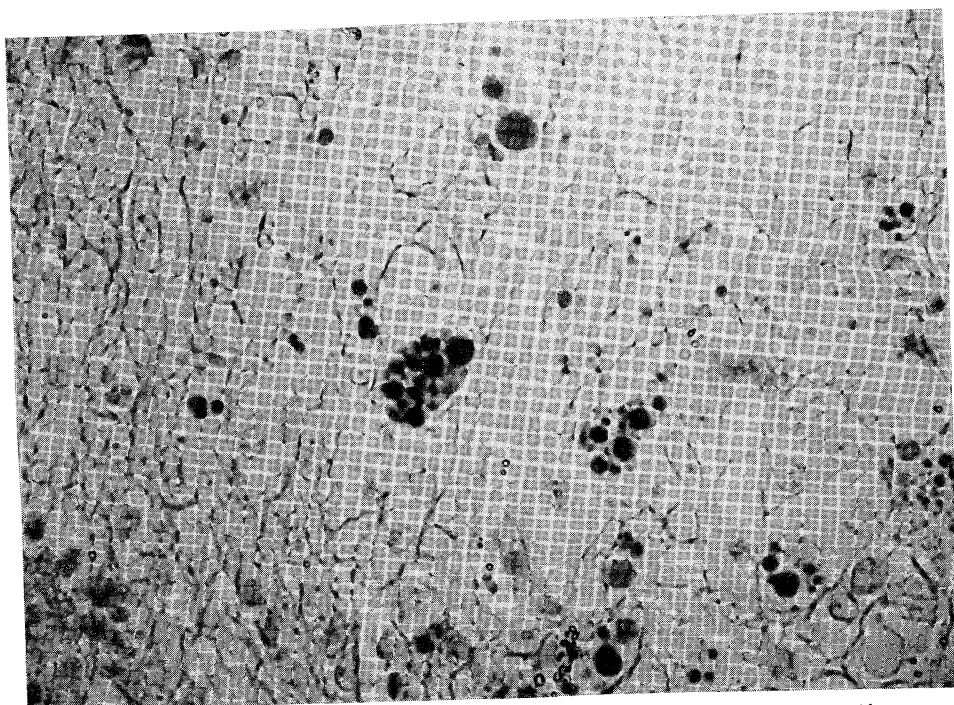


Fig. 2. Glycoprotein globules are distributed in the cutaneous type of Kaposi's sarcoma. Phosphotungstic acid hematoxylin (PTAH), original magnification X400.

the ovary and testicular (Kurman and Norris, 1976a; Kurman and Norris, 1976b; Shirai *et al.*, 1976; Wold *et al.*, 1983) were very similar to such globules in the tissue of Kaposi's sarcoma.

Human fetal livers and hepatocellular carcinomas showed a fine granular fluorescence of alpha-fetoprotein (AFP) (Linder and Seppälä, 1968; Engelhardt *et al.*, 1971; Purtilo and Yunis, 1971). However, hepatocellular carcinoma were faint alpha-fetoprotein (AFP) fluorescence or virtually no fluorescence (Chu *et al.*, 1974).

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カポジ肉腫の組織内に見られる PAS およびPTAH 陽性物質

千馬正敬, 板倉英世, 鳥山 寛, 宇津田 含 (長崎大学熱帯医学研究所病理学部門)

著者らは、カポジ肉腫の組織内に好酸性に染色される球状の物質を2例見出した。これらの球状物質は PAS, アミラーゼ消化 PAS および PTAH において陽性に染色される。これらの結果から、この球状物質は糖タンパクであることが示唆される。この球状物質の形態は、卵巣および睪丸の卵黄嚢腫瘍の 内に見出されるアルファ-フェトプロテインの球状物質に大変よく似ている。

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