Alveolar soft part Sarcoma (ASPS) of the foot.

S S Khadka*
*Pathologist, BPK Memorial Cancer Hospital, Bharatpur.

ABSTRACT
A 19 years old female presented with recurrent exophytic lesion of 5x5 cm on right foot for five years. The clinical suspicion was squamous cell carcinoma. Excisional biopsy was done and histological sections revealed characteristic ASPS. ASPS is characterized by relatively slow growth and seldom recurs after complete resection. Factor that can influence prognosis are patient age at presentation, tumor size, and the presence of metastasis at diagnosis.

Key words: Alveolar soft part sarcoma, foot, Nepal.

INTRODUCTION
Alveolar soft part sarcoma (ASPS) is a clinically and morphologically distinct soft tissue sarcoma that was first defined and named by Christopherson et al in 1952. Before this report, typical cases had been described under various designation including malignant myoblastoma, angioendothelioma and even liposarcoma. In 1959, Dr Masson was the first to describe PAS positive, diastase resistant rhomboid or rod shaped crystals as a diagnostic feature of ASPS.

ASPS is extremely rare and is generally believed to account for <1% of soft tissue tumors overall. As many as 60% of ASPS cases are seen in women. The tumor typically occurs in extremities with smaller number of cases at other location such as chest and retroperitoneal tissue. In children, a substantial percentage of cases occur in the head and neck, often in the orbit and bone.

CASE REPORT
19 years old female, a farmer/housewife, residing in Jitpur, presented with recurrent fungating mass over the dorsum of right foot for last 5 years. The mass was excised in local hospital a year back, but, recurred and progressively increased in size for last one year. Repeat wide surgical excision was done and the specimen was sent for histological examination.

Gross examination revealed yellowish-white, well circumscribed mass of 9.5x9.0x3.5 cm with variable firm to friable areas. On cross section, it was white–tan with large area of hemorrhage (Fig. 1).

Light microscopic examination showed the tumor possessed an organoid or alveolar pattern separated by delicate vascular septae (Fig. 2). The tumor cells were large and polygonal. Cells contained vesicular nuclei with a single prominent nucleolus and abundant, finely granular, eosinophilic cytoplasm with distinct cell boundaries. Mitoses were rarely present. Large area of hemorrhage and area of necrosis were present. PAS (Periodic acid Schiff) stain characteristically displayed intracytoplasmic granules and crystalline rods (Fig 3).

DISCUSSION
The differential diagnosis of ASPS includes paraganglioma, granular cell tumor, metastatic renal cell carcinoma, malignant melanoma, hepatocellular carcinoma and adrenal cortical carcinoma. The clinical
features that are of value in differential diagnosis is age of the patient. Renal cell carcinoma, paraganglioma and granular cell tumor chiefly affect patient over 40 years old, rarely in patient younger than 25 years. In addition, renal cell carcinoma, hepatocellular carcinoma and adrenocortical carcinoma usually are demonstrated radiographically.

In most cases, malignant melanoma, granular cell tumor and paraganglioma can be differentiated from ASPS by the absence of the characteristic PAS positive crystalline material. Furthermore, the cells of granular cell tumor are less well defined, have a distinct granular cytoplasm. These tumors are not as vascular as ASPS.\(^1\)\(^,\)\(^2\)

Immunohistochemically, HMB45 and MelanA; Chromogranin and synaptophysin; Epithelial membrane antigen and cytokeratin; and S100 are useful markers to separate melanoma, paraganglioma, renal cell carcinoma and granular cell tumors, respectively from typical ASPS. These antigens have not been reported to be positive in ASPS.\(^3\)\(^,\)\(^4\)

Numerous immunohistochemical studies conducted for ASPS show variable and conflicting results. Non specific markers such as vimentin and non-specific enolase, desmin, smooth muscle antigen were positive in ASPS in series of studies. Regarding prognostic markers, ASPS has been reported to be strongly positive for nm23 and bax, weakly reactive for p53 and Ki-67 and negative for bcl-2 – positive cells.\(^3\)\(^,\)\(^4\)\(^,\)\(^5\)\(^,\)\(^6\)

Ultra structurally, tumor cells have numerous mitochondria, a prominent endoplasmic reticulum, glycogen and well-developed Golgi apparatus. It has been shown by Ladanyi et al. that the precrystalline cytoplasmic granules of ASPS contain monocarboxylate transporter 1 (MCT1) and CD147.\(^7\)

Cytogenetically, ASPS is characterized by a chromosomal translocation resulting in der(17)(X;17)(p11;25). This translocation causes the fusion of a gene of unknown function, ASPL, on chromosome 17 to the TFE3 gene on the X chromosome. Consequently, the ASPL gene is joined in frame upstream of either the third or fourth exon of TFE3, yielding two fusion variants, type1 and type2, respectively. Aulmann et al. demonstrated ASPL-TFE3 fusion transcript in paraffin-embedded ASPS by using fluorescence in situ hybridization and reverse transcriptase-polymerase chain. Pang et al. demonstrated a “bimarker strategy”, a combination of TFE3 immunostaining and ASPL-TFE3 transcript in paraffin-embedded tumor tissue. They have suggested a bimarker strategy as a useful diagnostic tool with sufficient sensitivity and specificity. It has also been suggested that the female predominance seen in patients with ASPS is because of the presence of two X chromosomes in these patients, increasing their chances of a translocation on this chromosome.\(^8\)\(^,\)\(^9\)\(^,\)\(^10\)

No histopathological features are predictive of prognosis. These tumors should not be graded under either the National Cancer Institute or French grading schemes. Features associated with improved prognosis include younger age at diagnosis, small tumor size and the presence of localized disease. ASPS most often metastasize to lungs, brain and bone. Metastases, sometimes to unusual locations such as the breast, may be the presenting symptom in some patient with ASPS. Adjuvant chemotherapy does not seem to be effective in the treatment of ASPS, although there may be some role for adjuvant radiotherapy in reducing the risk for local recurrences.\(^2\)

Figure 1.Gross appearance of the excised mass.

Figure 2.

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REFERENCES