Clinical Presentation
An 83 year old female presented with unilateral pleural effusion. She had a history of chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), invasive melanoma of the back and cutaneous squamous carcinoma of the forearm. 200ml bloodstained pleural fluid was aspirated.

Cytologic Findings
Two slides were prepared and stained; one air-dried slide with Diff-Quick and one fixed slide with Papanicolaou stain. The specimen was highly cellular showing two cell populations: Large single cells with high nuclear-cytoplasmatic ratio and pleomorphic nuclei (Fig. 1), and a monotonous population of small lymphocytes with coarsely granular chromatin (Fig. 2). A cell block was prepared and showed similar features. Some material was sent for flow cytometry.

Follow up studies
Immunocytochemistry showed that the large malignant cells were positive for Sox-10 (Fig. 3) and negative for Calretinin, BerEP4, LCA and TTF-1. Based on these findings, a diagnosis of melanoma was made. Flow Cytometry expressed CD19 and CD5 positive B-cell population (Fig. 4) and one fixed slide with Papanicolaou stain. The specimen was highly cellular showing two cell populations: Large single cells with high nuclear-cytoplasmatic ratio and pleomorphic nuclei (Fig. 1), and a monotonous population of small lymphocytes with coarsely granular chromatin (Fig. 2). A cell block was prepared and showed similar features. Some material was sent for flow cytometry.

Discussion
Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL) is a low grade lymphoproliferative disorder. It is the most common adult type of leukemia diagnosed in Australia. Each year in Australia, approximately 1400 people are diagnosed with CLL/SLL which occurs more frequently in men than in women. CLL/SLL patients are known to have increased risk of developing a second cancer, melanoma being the most common. Other cancers include non-melanoma skin cancer, lung, respiratory tract, oral cavity and pharynx, prostate, kidney and lymphoma. An association between malignant melanoma and lymphoma was first reported in 1973. Many studies have confirmed patients with CLL/SLL have an increased risk of developing malignant melanoma. In several retrospective studies the risk of melanoma was found to be 7.74 times that of the general population. Chronic immunosuppression in CLL/SLL patients increases the risk for the development of secondary malignancies. The collision of two malignancies in a pleural effusion is a very rare phenomena. Only a handful of cases have been reported.

References
5. Dilip K Das: Serous effusions in Malignant lymphomas: A review Diagnostic Cytopathology 2006; 34:335-347.

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