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CASE REPORT

Mesothelioma – A change in the natural history? Distant cutaneous and soft tissue metastases following chemotherapy

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Summary

Mesothelioma is a rare tumour arising from the serosal surfaces of the pleura, peritoneum and other body cavity linings. Distant cutaneous metastases of mesothelioma are rarely noted but have been previously reported. This case demonstrates both cutaneous and soft tissue metastases to the kidney, lung, thyroid, lymph nodes and tongue from a pleural malignant mesothelioma. These metastases were demonstrated during the lifetime of the patient, most are noted post-mortem. To the best of our knowledge, this distribution of both cutaneous and soft tissue metastases has not previously been reported. We propose that as the incidence of mesothelioma increases and life expectancy is altered by treatment, metastases may be a more common occurrence.

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Case report

A 54-year-old man with a 30-pack year history of smoking with no recalled history of asbestos exposure presented with weight loss and no respiratory symptoms. A chest X-ray showed

extensive pleural thickening around the left lung. A CT (computerised tomography) scan noted an extensive pleural-based tumour encasing the left lung. There was also mediastinal adenopathy, lung nodules and invasion of the ribs. A CT guided biopsy of the pleural tumour was undertaken.

Biopsies showed an infiltrative biphasic tumour having both a spindle celled and epithelioid pattern. Immunocytochemistry showed both components to be strongly positive for calretinin, BerEp4 and CEA with occasional cells

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showing weak staining for CK5/6. No mucin was identified within the tumour cells. This pattern of immunoreactivity is consistent with malignant mesothelioma.

The patient received 5 months of palliative chemotherapy (pemetrexed and cisplatin). Three months following completion of the course treatment he noted a soft tissue swelling on the scalp; initially thought to be a sebaceous cyst, it was excised under local anaesthetic by his general practitioner. Microscopy of the skin specimen showed bands of epithelioid cells infiltrating a fibrous stroma. Immunocytochemistry demonstrated tumour cells to be positive for calretinin and CK5/6. The pattern of immunoreactivity was consistent with mesothelioma, confirming that the skin lesion was a metastasis.

The following month a neck swelling was noted by the patient. A second CT showed significant lymphadenopathy at the base of the neck extending to the axilla and supraclavicular fossae. There were also multiple pulmonary metastases in the right lung that had increased both in size and number, multiple enlarged nodes in the upper abdomen, multiple gluteal subcutaneous deposits and a low attenuation lesion in the left kidney consistent with a metastasis. There was also a mass in the thyroid extending to the isthmus and an abnormal focus in the tongue. A core biopsy was undertaken of thyroid, this biopsy consisted of tumour cells surrounded thyroid follicles. These tumour cells were positive for calretinin, BerEp4, weakly positive for CK5/6 and negative for thyroglobulin. This pattern of immunoreactivity is consistent with metastatic mesothelioma infiltrating the thyroid gland.

Discussion

Malignant mesothelioma is an uncommon tumour and skin metastases are rare, skin involvement is usually secondary to direct tumour spread^{1,2} or contamination of surgical sites.³ Widespread cutaneous metastases⁴ and metastases to the tongue,⁵ brain⁶ and lymph nodes⁷ have previously been reported. This case demonstrates both widespread cutaneous and soft tissue including thyroid, metastases.

Mesothelioma is traditionally thought of as a primary tumour that rarely metastasises, this case report adds to growing evidence to support that this is not a universal truth and the tumour is capable of spreading to a variety of sites. Reported cases of symptomatic mesothelioma metastases remain rare and most are noted post-mortem. This case demonstrates histologically the presence of metastases ante-mortem in two separate sites, and in the case of the thyroid, a site not previously reported.

The majority of patients with mesothelioma present at an advanced stage. The optimum local and/or systemic

treatment is yet to be defined and prognosis remains poor. A combination of cisplatin and pemetrexed has shown an increase in median survival,⁸ we propose that this may effect a change in the natural history of the disease. This is further supported by findings from thoracic surgical studies where metastatic mesothelioma can become the predominant pattern of failure following aggressive surgical resection.⁹

We postulate that treatment with chemotherapy allowed time for metastases to occur in the context of a primary tumour that otherwise would rarely metastasise due to an extremely poor prognosis. Perhaps in the context of radical surgical and systemic treatments mesothelioma should no longer be considered as a progressive primary tumour alone. This report adds to the documented sites of potential metastasis.

Conflict of interest Statement

There are no conflicts of interests for any of the authors, to declare.

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