Disease regression in malignant melanoma—should patients be encouraged to seek alternative treatments? Case Report.

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Malignant melanoma is a rare cancer with incidence in UK of 3% (Cancer Research, 2004). It has been previously reported to undergo spontaneous remission (King et al., 2001), (Papac, 1996), (Menzies & McCarthy, 1997). The incidence of metastatic melanoma with a completely regressed or unknown primary cutaneous lesion is estimated at 3% to 15%, regression of metastases is very rare (King et al., 2001).

We describe a case of a 47 year old woman who was diagnosed with stage III malignant melanoma in March 2004. The initial lesion measured 2.5 cm in diameter, was pigmented and situated in the left posterior angle of the neck. The excision biopsy confirmed malignant melanoma Breslow thickness 1.75mm, Clark level IV with vertical and lateral spread, pT2a. Following excision biopsy the patient had a wide local excision and sentinel lymph node biopsy. The wide local excision showed no residual melanoma cells but there were melanoma cells in one of the two sentinel lymph nodes found. She therefore proceeded to the left radical neck dissection and nodal clearance. None of the 26 lymph nodes excised showed melanoma cells. The staging CT scan at the time did not show any evidence of distant metastases and the final AJCC staging was IIIA. Sixteen months later she gave a history of nausea for several weeks and weight loss of 7lbs. The CT scan was arranged which showed metastatic disease in the lungs and liver (see figure 1). The symptoms have settled with no further nausea and stable weight, therefore no treatment was instigated and
the plan was to repeat CT in three months. The patient who was obviously very upset at the diagnosis decided to radically change her lifestyle with regular exercise classes and dietary adjustments, mainly addition of antioxidants in the form of Nutriedge supplement, green tea: two to three cups per day and on advise of her Australian nephew pineapples, two a week including the fruit cores. Nutriedge formula contains combination of antioxidants available over the counter mainly: alpha and beta carotene, vitamin C, selenium and vitamin E. The CT scan repeated as planned three months later showed almost complete resolution of lung and liver metastases (see figure 2).

Spontaneous regression of cancer is rare and the evidence is often anecdotal. The stories of cancer resolution as a result of lifestyle change or alternative therapy are even more infrequent and regarded with caution. Melanoma on the other hand is one of the rare tumours where spontaneous regression is not unheard of. King et al (King et al., 2001) reviewed the literature and described one such case in 2001. The literature suggest that the regression is more likely to occur if there is some non specific event such as local infection, autoimmune illness, transfusion reaction, a biopsy or incomplete excision. Such behaviour would suggest a correlation with an immune system response although the mechanism itself is poorly understood. It is likely to be T-lymphocyte driven following recognition of a tumour antigen presented de novo to the immune system. In the case of our patient there is no specific event other than a lifestyle change and a healthy diet as well as an increased intake of the antioxidants and pineapples. The evidence for use of antioxidants in cancer is extensive however the data remains confusing. Green tea for example acts via the active compounds mainly catechins and causes inhibition of VEGF-induced
angiogenesis (Tang et al., 2003), (Dona et al., 2003). A large Japanese study from 1986 showed a delayed cancer onset in patients drinking over 10 cups of green tea a day with a 7.3 years for women and 3.2 years for men (Nakachi et al., 2000). The same authors found decreased recurrence of breast cancer with increased consumption of green tea in 472 patients with lower recurrence rate and longer disease free interval, the results were valid mainly for stage I and II breast cancer (Nakachi et al., 1998). There are also some encouraging results in cancer prevention studies in prevention of polyp developments after colorectal polypectomy (Fujiki et al., 2002).

Antioxidants have also been studied extensively. There is a definitive link to low cancer rates in people who consume large amounts of fruit and vegetables, however there is no convincing evidence as yet that the antioxidants in fruit and vegetables have a cancer protective effect. The main mechanism of such action would rely on protection against DNA damage due to free radicals. Similarly selenium is a known antioxidant acting through Selenium dependent glutathione peroxidases. Human trials with the cancer rates as the endpoint are confusing. A very large randomised Chinese study conducted in the area with a high incidence of oesophageal/ gastric cancer showed significantly lower cancer rates in those randomised to β-carotene, vitamin A and selenium (Blot et al., 1993). However studies conducted in Europe and the USA failed to show benefit, on the contrary they showed increased incidence of lung cancer (1994), (Omenn et al., 1996). A French study of Vitamin C, Vitamin E, β-carotene selenium and zinc or placebo, showed a significant protective effect against cancer in men but not in women (Hereberg et al., 2004).

The final dietary supplement used regularly by our patient was pineapple including its core. The active ingredient in the pineapple is known as bromelain. It is known to have various anti-oedematous, anti-inflammatory, anti-thrombotic and fibrinolytic
activities <review (Maurer, 2001)>. It belongs to a group of proteolytic enzymes. First observations on the effects of bromelain in cancer have been reported in 1972 (Gerard, 1972). The in vitro data is more recent with a clear inhibition of cellular proliferation (Maurer, 2001).

The cancer treatment using a combination of antioxidants, bromelain, green tea and exercises most certainly has to be viewed with caution. However the effects of these supplements on the immune system effectors can not be disputed and since neither of those compounds have any toxicities (perhaps with the exception of β-carotene) cancer patients should not be discouraged to search for alternative treatments which may be complementary to standard therapy.


Figure legends:

Figure 1.

A. A CT image on lung windows showing a lung deposit approximately 3cm in diameter in the right upper lobe.

B. A CT image showing multiple low attenuation areas in both lobes of the liver in keeping with secondary deposits.

Figure 2

A. A CT image showing that the right upper lobe nodule has almost completely resolved

B. A CT image showing that the previously noted liver deposits are no longer visible.
Figure 1