antithyroid antibodies, and when indicated, scans and studies of bone uptake, 51 (94 percent) of the 54 patients with PMS were found to have one or more indications of thyroid dysfunction, as compared with none of the 12 patients without PMS. Of the 51 women with PMS who had evidence of thyroid dysfunction, 16 (31 percent) had a gradually severe thyroid disorder diagnosed without reference to the ΔTSH, and 35 (69 percent) had an elevated TSH level and a distinctly augmented ΔTSH, suggesting subclinical hypothyroidism (Table 1).

In the second study, the last 34 of the 54 patients with PMS seen in the first study were treated with levothyroxine sodium, a synthetic T4 supplement. The dose of T4 was initially 0.025 mg and was increased to 0.1 mg slowly over a period of four weeks. Repeat testing of T4, T3, and TSH levels was done six weeks after treatment began, with the final dosage established to obtain approximate values of TSH = 1, T4 <12, and T3 = 150 by radioimmunoassay (typically 0.15 mg taken once a day in the morning). All 34 women reported complete relief from the symptoms of PMS when the final dosage was reached.

In the absence of a double-blind, placebo-controlled clinical trial, these results must clearly be considered preliminary. They do, however, suggest a link between PMS and thyroid hypofunction.

**NEEDLE-STICK TRANSMISSION OF HUMAN COLONIC ADENOCARCINOMA**

**To the Editor:** Transplantation of allogenic tissue from one human into another normally leads to a cell-mediated immune response that rejects the transplanted tissue.1 We report a case of accidental injection of a human colon adenocarcinoma cell line across HLA disparities into an otherwise healthy laboratory worker, with the subsequent sustained growth of a tumor. The patient was a healthy 19-year-old woman, employed in a laboratory outside the National Institutes of Health, who had no clinical history to suggest immune deficiency. When she was injected, her left hand was accidentally punctured by a needle that had previously been used to draw up a suspension of a human colon adenocarcinoma cell line. No apparent injection of the suspension occurred; however, a superficial wound with a small amount of bleeding was noted. Two weeks later, she noticed a small nodule at the point of the needlestick. An excisional biopsy of a node measuring 9 by 4 mm was performed on day 19 after the injection. Examination of the excised nodule revealed adenocarcinoma, which was mucin-positive and immunoreactive for carcinomembranogenic antigen. No inflammatory response or necrosis of the tumor was present (Fig. 1). The patient underwent a wide excision of the area of inoculation. No residual tumor was found. She has remained well for four years, without evidence of recurrence of the tumor. HLA typing of the patient showed HLA A2, A11, B44, and Bw55, and typing of the cell line showed HLA A2, B13, and Bw30. Although an argument can be made that the patient might ultimately have rejected the allogenic tissue, we believe that the lack of an inflammatory response and the rapid growth of the nodule over a period of 19 days make this outcome questionable.

Lymph-node metastasis has been reported in one patient2 and local growth of a tumor has been reported in four patients,3,4 who received allogenic adenocarcinoma cells as part of immunotherapy protocols for metastatic cancer. Death from metastatic disease has been reported in a case of melanoma injected from a patient into her mother.4 In a study of 15 volunteers injected with epidermoid carcino
toma cells, inflammatory cells made up more than 50 percent of the tumor nodules in all patients by day 7.5 We are unaware of other reports of an inflammatory reaction to and sustained growth of allogenic malignant cells following the injection of tumor cells from a completely unrelated source into an otherwise healthy person or of reports of such growth following the accidental inoculation of a laboratory worker.

We wish to make laboratory personnel working with malignant human cell lines aware of the potential danger of accidental inoculation, and we recommend that the possibility of transmission of malignant disease be considered before untreated live allogenic tumor cells are used in cancer immunotherapy protocols.

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**Figure 1. Histopathological Sections of an Excised Tumor Nodule, Showing Nests of Adenocarcinoma Cells Extending through a Fibrous Pseudocapsule (Top) and a High-Magnification View Showing Abundant Mitotic Figures and the Absence of an Inflammatory Response (Bottom).**

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