A 51-year-old woman with a tubo-ovarian cyst and a suspected ovarian tumor recently underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy and repair of umbilical hernia. The pathology report was undifferentiated solid carcinoma of the left ovary with metastasis to the right ovary. Is radiation therapy or chemotherapy now indicated?

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This ovarian cancer which involves both ovaries but no extra ovarian metastases is FIGO Clinical Stage IB. The absence of ascites or penetration of the tumor capsule is of fairly good prognostic significance. A histology report of undifferentiated solid carcinoma is of poor prognostic significance.

Generally, postoperative radiotherapy adds little to the favorability of the prognosis if there are no extra-ovarian metastases. However, because of the complete lack of differentiation, we would give this patient postoperative high voltage irradiation to the pelvis. We would not irradiate the upper abdomen. But there is no conclusive evidence as yet that postoperative chemotherapy will improve five-year cure rates. On the other hand, cure rates at the Columbia-Presbyterian Medical Center were considerably better during the 1950s and early 1960s when over 50 percent of patients were irradiated postoperatively, while in previous decades, scarcely 25 percent were irradiated.

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Following surgery, is the effectiveness of lymphocytes to fight remaining cancer cells greatly impaired and is the likelihood of metastases greater? If so, what mechanisms are at work?

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The effect of "stress" on increased tumor "takes" in a tumor-animal model was popularized by the work of Cole and co-workers who showed that host resistance is diminished after surgical stress, but recovers with a rebound effect approximately 12 days postoperatively. Dr. David Bruce has shown that anesthetic agents have a deleterious effect on reticuloendothelial function. Further work by Wingard, Frederickson and the author has shown a decrease in antibody forming lymphocytes. Especially interesting was our finding of a decrease in the peripheral white blood count after anesthesia.

Although the mechanism is not fully understood, it does not appear to be a direct cytotoxic effect of the agents on lymphocytes. Activation of the autonomic nervous system will affect both peripheral WBC and total WBC. Other possible mechanisms may be (1) decrease in peripheral sludging; (2) decrease in elaboration of the neutrophil-mobilizing factor described by Ludwig and co-workers; or (3) increase in removal of WBC due to increased reticuloendothelial activity.

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What is the relationship of paraplegia and associated chronic cystitis to cancer of the bladder? What role does the long-durati

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A strong association exists between paraplegia and cancer of the bladder. For example, the incidence of bladder cancer in the general population is 0.017 percent, while in paraplegics it ranges from 0.28 to 0.47 percent. A 16- to 28-fold increase. Furthermore the severity of the disease seems worse among paraplegies. The age-adjusted mortality figure for bladder cancer is approximately 0.006 percent in the population at large, while in paraplegics it is 0.29 percent, a 48-fold increase. In addition, patients with paraplegia develop bladder cancer at a younger age (fifth decade) than does the general population.

The reasons for the strong relationship between paraplegia and urothelial carcinoma are not entirely clear. Three factors are of possible etiologic significance: urinary tract infection, indwelling catheterization and bladder irritation by calculus. Nearly all paraplegics who developed bladder cancer have had chronic urinary tract infection; most have been treated with indwelling urethral or suprapubic catheterization. Approximately one half of these patients have had bladder calculi removed in the past.

Which of these possible factors is of greatest significance is not yet known. About 40 percent of patients with bladder cancer have urinary tract infection. However, this may be an effect of the tumor rather than the cause as suggested by the predominance of more opportunistic bacteria (staphylococcus, enterococcus) in bladder cancer patients compared to the coliform predominance in general urinary tract infection statistics. Foreign bodies, such as catheters or calculi, in the urinary bladder experi-