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ment. The counter-immunoelectrophoresis method may provide a more widely usable test, with equal specificity and accuracy. CIE is also currently under a nationwide American Cancer Society field test.

Further Chemical Assessment

One must not overlook further chemical assessment and determinations of prostatic fluid. In most patients, continuing evaluations of this substance are warranted upon urologic examination. Early tests suggest that certain isoenzymes may be altered.[10] In fact, elevations in LDH in prostatic cancer patients seem to support the concept that the prostate cancer may not only be multi-focal in its histologic origin, but also may exert a general metabolic effect upon the gland.[10]

"Within the past few years, several new assays have been developed . . . and are currently under a nationwide field trial."

Bone marrow acid phosphatase determinations have been utilized as well as lymph node biopsy in the neck and other areas to detect metastatic disease where it is not thought to be clinically present. The goal and philosophy of therapy can be substantially changed by such tests. Newly purified acid phosphatase determinations previously referred to[8,9] have been used recently to assess the value of bone marrow acid phosphatase in staging prostatic cancer but the results are still tentative. These tests appear to be more accurate than those used previously and upon which clinical recommendations have been made. At present, it would appear that such determinations will confirm the unexpected presence of microscopic prostatic cancer; further tests and trials will determine how often this occurs. The preliminary results[11] from such new tests suggest that it does not occur frequently. One must again separate the newly available methods of staging for the extent of disease beyond the primary tumor from former methods. Past results using other techniques cannot be applied to present circumstances. Currently, bone marrow acid phosphatase measurement by these new techniques appears to only minimally improve the diagnosis of metastatic disease.

Staging Classifications

In the past, there have been differences in both the staging and end results reporting for a variety of tumors. The American Joint Committee for cancer staging and classification has used Roman numerals I through IV to correspond with Whitmore's A through D.[6] The International Union Against Cancer (using the TNM classification) has a slightly different approach to clinical staging. These systems are currently under evaluation by several groups. The most current and comprehensive comparison of these classifications was derived from that prepared by Boxer[6] (Table 1). The most significant difference in all of these approaches seems to occur with the early focal or occult cancer. In the United States, further definition and further subclassification is occurring and, as a result, other recommendations are being made for therapy. The so-called focal localized nodule of the prostate frequently occurs in the B stage. However many believe that its frequency is less than had been thought.[6] Localized pelvic prostatic cancer, stages C or D, or D_1, are now more frequently defined as a result of bilateral pelvic lymph node dissection. To date, no one can precisely define when a pelvic node dissection is diagnostic, when it is therapeutic, or even when it constitutes a procedure acceptable to all. There are extensive procedures performed in the course of some interventions; lymph node sampling is done in others. The numbers of sections of the lymph nodes considered necessary for the detection of microscopic cancer cells is a problem of institutional variation. Moreover, lymphangiograms have recently been substantially used for preoperative staging with some modification in technique.[1,6] The advent of CT scanning will doubtlessly provide further changes, additional refinement and more assistance in the determination of the extent of disease without surgical intervention. Implicit in all of these factors is that the degree of differentiation of the primary prostate carcinoma may affect the survival regardless of the therapeutic intervention. This has been previously noted[1] and has been most carefully determined in a recent study by Whitmore and associates.[12] Important determinants of metastases subsequent to a particular form of therapy probably do indeed seem to relate to:

- The large size of the primary tumor;
- Poor histological differentiation;
- Volume of lymph node metastases;
- Lack of local prostatic response to radiation;
- Possible seminal vesicle invasion.[12]

"One must not forget Lord Batson's plexus and the prostatic venous drainage! It may prove of continued importance."

Such careful studies provide important new factors that will affect the further classification, staging and assessment of our end results.

Randomized selection of cases from institutions doing one form of treatment compared to others who have performed lymph node dissections have been reported.[13] While these emphasize the importance of lymph node drainage and lymph node assessment in the staging of extent of disease, they also document that even today there are still unanswerable questions or at least instances of clinical variance. One must not forget Lord Batson's plexus and the prostatic venous drainage! It may prove to be of continued importance. The possibility that the interruption of lymph node drainage may have nonbeneficial immunological effects has been raised but not resolved.

In addition to the factors mentioned for staging prostate cancer and the variety of prognoses reflected, improvement may come from other areas of biology. Tumor markers or hormonal (androgen and estrogen) receptor sites have been found to be useful for therapeutic treatment and also for clinical treatment trial stratification. Work on a variety of receptors is underway and promising results have been reported in terms of estrogen receptors in human prostate cancer.[14] While final results will not be available in the near future, current data suggest that some hormonal markers may be useful in the future in clinical classification and further therapeutic stratification.

Physical examination has not been extensively mentioned in this particular report. It remains, however, an essential part of any program of complete evaluation and initial and continuing inspection. Biopsy techniques likewise have not been reviewed since they have been extensively reported upon.[6] The use of roentgenograms and other forms of scanning are helpful and reports are also available. Prostatic echography is a new tool and initial promising results have been reviewed.[6] The scanning of bone marrow in prostatic cancer may also be useful for a variety of staging purposes, but more importantly, for therapeutic decisions regarding the efficacy of adjuvant treatment, i.e., chemotherapy. Other immunologic markers and assessments of immunocompetence of status of the host, remain the subject of intensive and widespread individual research studies. They should be watched for futher promising reports but at present cannot be translated into widespread therapeutic or diagnostic recommendations.

Primary Treatment

As in the past, perineal prostatectomy and radical retropubic prostatectomy are being performed today (Table 2). The perineal approach has not changed and is being used by some for more selected cases or patients with other medical life-threatening complications. As is reflected in recent reviews (Table 2),[6] there are some patients who are now benefiting from ret-

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