109. *Incidence of Clostridium Difficile (CD) Infection in Patients (pts.) with Diarrhea (D) on a Gynecologic Oncology Service.* K. A. O'Hanlan, L. Rodriguez-Rodriguez, R. Byrnes, G. Goldberg, P. Litwin, and C. D. Runowicz, Albert Einstein College of Medicine, Bronx, New York 10461.

CD is a gram-positive toxin-secreting anaerobe which causes a spectrum of diarrheal syndromes, associated in severe cases with pseudomembranous colitis. Antibiotics (A), chemotherapy (CT), and surgery (S) have been previously described as risk factors. The diarrhea which frequently accompanies pelvic radiation therapy (RT) has not been previously reported to be associated with CD infection. Three pts. on the gynecologic oncology service receiving RT developed CD-associated diarrhea. To further evaluate the role of CD infection in pts. with RT-associated D, a prospective study was designed to analyze stool samples from RT pts. with D for CD toxin. The effects of CT, S, and A were also evaluated. Eighty-three pts. with D had stool samples analyzed for CD toxin between 3/87 and 6/88. Twenty-one pts. (24%) had positive CD assays. Of the 23 RT pts. with D, only 3 were positive for CD toxin. RT was not significantly associated with an increased risk of CD infection (χ^2 test). As expected, antibiotic use was associated with an increased incidence of CD infection ($P < 0.025$, χ^2 test), with combination antibiotic therapy achieving the greatest significance ($P < 0.005$). S alone, CT alone, S+CT, S+RT, and RT+CT had no effect on the incidence of CD infection. Thus, RT pts. with D, even with prior S or CT, can be symptomatically treated and can be evaluated for CD toxin assay only if D persists. However, RT pts. with D and a recent history of combination antibiotic administration should have a CD toxin assay performed and appropriate therapy instituted.

110. *Intraoperative Retroperitoneal Anatomical Measurements to Design Pelvic Field Sizes for Radiation Therapy.* B. E. Greer, D. C. Figge, W. J. Koh, A. H. Russell, J. M. Cain, and H. K. Tamimi, Division of Gynecologic Oncology, Departments of Obstetrics and Gynecology, and Radiation Oncology, University of Washington, Seattle, Washington 98195.

Field sizes and techniques for whole pelvis radiation therapy have generally evolved based on nonoperative landmarks. Since July 1986, 85 patients have had intraoperative retroperitoneal measurements carried out at the time of radical surgery in an effort to establish an anatomical basis for the currently utilized field sizes. Anatomic measurements of the pelvic and para-aortic arterial branches were made in reference to the sacral promontory to correlate with lymphatic pathways. The mean level of the aortic bifurcation was 6.8 cm (±1.5 cm) above the sacral promontory. The mean level of the bifurcation of the common iliac artery was 1.7 cm above the promontory (±1.8 cm) on the right and 1.4 cm (±1.7 cm) above on the left. Both common iliac bifurcations were above the level of the sacral promontory in 86% of patients and in only 3 patients (4%) did both bifurcate below the level of the promontory. Transverse pelvic measurements in 80 patients demonstrated a width of 12.4 cm (±1.5 cm) at the level of the obturator fossa and 13.1 cm (±1.3 cm) at the most inferior outside width of the external iliac arteries. The outside width of the femoral arteries was measured in 75 patients in order to establish a simple external measurement for determination of field widths. The outside width of the femoral arteries at the level of inguinal ligament was 14.6 cm (±1.5 cm). These data suggest that to adequately cover the lymphatics in whole pelvic radiotherapy, fields must be based on intraoperative measurements or an anterior field width of at least 16 cm with a superior border at the L4–L5 interspace will be required. An additional observation that the origin of the uterosacral and cardinal ligaments was clearly posterior to the rectosigmoid indicates that lateral fields should include the entire anterior sacral silhouette.

111. *Reliability of Frozen Section Examination in Identifying Poor Prognostic Indicators in Stage I Endometrial Adenocarcinoma.* V. K. Malviya, G. Deppe, J. M. Malone, Jr., A. S. Sundareson, and W. D. Lawrence, Wayne State University, Detroit, Michigan 48201.

Current management of Stage I adenocarcinoma includes hysterectomy, bilateral salpingo-oophorectomy, selective paraaortic and pelvic lymphadenectomy, and peritoneal cytology. Postoperative radiation therapy (RT) is selectively employed in patients with histologically defined poor prognostic factors including higher grade, increasing depth of myometrial invasion, occult involvement of the cervix, positive pelvic lymph nodes, and adnexal metastases. These poor prognostic factors, however, are not known at the time of primary surgery, requiring selective pelvic and paraaortic lymphadenectomy in patients with higher grade lesions. This leads to increased operating time, blood loss, and morbidity when combined with postoperative RT. We attempted to identify these poor prognostic factors by frozen section (FS) of the uterus at surgery in 55 patients with Stage I endometrial adenocarcinoma and found an excellent correlation between FS and permanent sections (PS). The depth of myometrial invasion was accurately predicted in 94.5% (54/55) of cases and histologic grade in 90% (49/55) of all patients. Four of six (66%) patients with occult invasion of the cervix on PS were identified on FS. Using the above criteria, we identified by FS all patients (15/55) who received postoperative RT based on PS, thus avoiding the combination of pelvic lymphadenectomy and irradiation in these patients. Our preliminary data warrant the further evaluation of selected FS to identify patients who will require adjuvant postoperative radiation therapy, thereby eliminating the need for pelvic lymphadenectomy.

112. *Flow Cytometric DNA Analysis of Stage I Endometrial Carcinoma.* L. Britton, T. Wilson, T. Gaffey, H. Wieand, and K. Podratz, Mayo Clinic, Rochester, Minnesota 55905.

Flow cytometric DNA analysis was performed on 203 paraffin-embedded archival specimens obtained from patients with surgical Stage I endometrial carcinoma to ascertain prognostic value of DNA ploidy patterns. Primary therapy during this time interval (1979–1983) consisted of definitive extirpative therapy with adjuvant therapy determined by histologic grade, cellular subtype, myometrial invasion, and peritoneal cytology. Following deparaffinization, rehydration, digestion, and treatment with propidium iodide, DNA content was analyzed with the FACS IV flow cytometer. Diploid DNA patterns were identified in 171 (84%) specimens, while nondiploid characteristics were observed in the remaining 32 (25 aneuploid, 7 tetraploid). While nondiploid specimens accounted for only 16% of all Stage I patients, 50% of all relapses were associated with this subgroup. Regardless of treatment or other pathologic parameters, progression-free (PF) 5-year Kaplan–Meier survival estimates were 92 and 63% for patients with diploid and nondiploid patterns, respectively ($P < 0.001$). While overall 5-year PF survival for patients with grade 1 and 2 lesions was 90%, further stratification by diploid and nondiploid patterns resulted in PF survivals of 94 and 64%, respectively ($P < 0.001$). Furthermore, peritoneal cytology was positive in 7 patients with 0/5 relapses noted in patients with diploid patterns and 2/2 relapses with nondiploid patterns. These preliminary studies suggest the potential value of DNA ploidy status as an objective prognostic determinant for patients with Stage I endometrial carcinoma.

113. *Value of Adjuvant Whole Pelvic Irradiation following Wertheim Hysterectomy for Early Stage Squamous Carcinoma of the Cervix with Pelvic Nodal Metastases: A Matched Control Study.* W. Kinney, R. Alvarez, G. Reid, M. Schray, S. Soong, G. Morley, K. Podratz, and H. Shingleton, Mayo Clinic, Rochester, Min-