Duplications of the Müllerian System and Pelvic Endometriosis

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This study reports on 20 young adult female patients who presented with chronic pelvic pain and distinctive endometriotic lesions confined to the posterior pelvic peritoneum (posterior broad ligaments, uterosacral ligaments and cul-de-sac of Douglas). At laparoscopy minute, firm, endometriotic lesions were found on the rims or in the depths of elliptical peritoneal defects limited to the posterior pelvis. The peritoneal defects were unilateral or bilateral, single or multiple. Microscopically the endometriotic lesions were characterized by stroma and glands, including cystically dilated glands which often contained inspissated debris and hemosiderin. The endometriotic foci were generally accompanied by hypertrophied smooth muscle, dense fibrous connective tissue, bundles of peripheral nerve, thick-walled, congested telangiectatic blood vessels, microcalcifications and infiltrates of small lymphocytes and mononuclear cells. The importance of recognizing these lesions during laparoscopic examination of the pelvis is emphasized. They are inconspicuous due to their neutral coloration and unusual location within peritoneal defects, in contrast to the typical acquired endometriotic plaque or nodule.

We hypothesize that these lesions (peritoneal defects with endometriosis) represent rudimentary duplications of the müllerian ducts which arise on the anteromedial surface of the genital ridge. At the time of fusion of the müllerian tubes to form the uterus and upper vagina, this anteromedial surface becomes the posterior aspect of the broad ligaments and posterior cul-de-sac. We believe that this form of endometriosis may be a congenital anomaly persisting under the influence of maternal hormones but regressing after birth. During childhood, this anomalous tissue is thought to atrophy leaving the characteristic elliptical defects in the peritoneum. At menarche these endometriotic foci may be reactivated resulting in pelvic pain. We present the results of our search for verification of these hypotheses in fetal and autopsy material from premenarchal females. Immunocytochemical characterization of the structures observed in our biopsies will also be described. The clinicopathologic characteristics of this lesion will be compared to those of typical acquired endometriosis.

Cytologic Investigation of Fluid from the Pouch of Douglas and Its Connection with Laparoscopic Findings

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Sixty-seven women with primary or secondary infertility were subjected to laparoscopy. Fluid from the pouch of Douglas was aspirated and examined cytologically. The cytologic evaluation included examination for mésothélial cells, macrophages, endometrial

Free Communications 316

cells and peritoneal reaction. No statistically significant difference was found in the quantity of the peritoneal fluid in connection to positive or negative signs of macroscopic endometriosis as well as with all the cytological parameters. A statistically significant difference was noted in cases of macroscopically positive endometriosis in connection to macrophages ($0.001 > p > 0.01$) and endometrial cells ($p > 0.001$) but no correlation was found to mésothélial cells and peritoneal reaction fluid.

The presence of pelvic adhesions had no influence on any of the former parameters. Also no correlation was noted between macroscopic endometriosis and pelvic adhesions. No statistically significant difference was found between cytological parameters and ovulation (documented by laparoscopy or biochemically), luteinizing unruptured follicles and anovulation. The presence of endometrial cells in cases of negative macroscopic endometriosis was twice as often in cases of normal tubal patency than in cases of tubal obstruction. Finally, no statistical connection was noted with the previous fertility condition of the patients.

The Pelvic Factor in Infertility: Biochemical and Cellular Aspects in Peritoneal Fluid

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Macrophage number and prostaglandin concentration (PGF2a and PGE2) were evaluated in peritoneal fluid (PF) of 120 infertile patients. PF was aspirated from the anterior utero vesical space and posterior cul-de-sac during laparoscopy. The patients were divided into four groups: (1) endometriosis before, and (2) after treatment with danazol and suprefact (gonadotropin-releasing hormone analogue), (3) tubal factor, (4) unknown infertility, and (5) control group.

Macrophage number was significantly higher in infertile groups compared with controls ($p < 0.05$). The highest level was observed in endometriosis ($p < 0.01$). These cells resulted much more active in endometriotic subjects.

Prostaglandin concentration, determined in the luteal phase of cycle was higher in endometriosis and in patients with infertility of unknown origin compared with controls ($p < 0.05$); the difference between endometriosis and other infertile patients was significant only for PGE2 class. The results suggest that endometriosis and unknown infertility are associated with activation of macrophages and release of active substances into peritoneal fluid that may be responsible of failure to conceive in these patients.