Local spread of cervical cancer revisited: a clinical and pathological pattern analysis.

Abstract:
Local tumor spread of cervical cancer is currently considered as radial progressive intra- and extracervical permeation. For radical tumor resection or radiation the inclusion of a wide envelope of tumor-free tissue is demanded. However, this concept may lead to considerable treatment-related morbidity and does not prevent local relapse. We propose an alternative model of local tumor propagation involving permissive compartments related to embryonic development. We analyzed local tumor spread macroscopically and microscopically in consecutive patients with advanced cervical cancer and post-irradiation recurrences. Macroscopically, all 33 stage I B (>2cm) tumors, 40 of 42 stage II tumors and 32 of 44 stage III B tumors were confined to the embryologically defined uterovaginal (Müllerian) compartment. Local tumor permeation deformed the uterovaginal compartment mirroring the mesenchyme distribution of the Müllerian anlage at the corresponding pelvic level in cases of symmetrical tumor growth. Tumor transgression into adjacent compartments mainly involved the embryologically related lower urinary tract. Compartmental transgression was associated with larger tumor size, paradox improvement in oxygenation and an increase in microvessel density. Post-irradiation pelvic relapse landscapes were congruent with the
inflated Müllerian compartment. Microscopically, all locally advanced primary cancers and post-irradiation recurrences were confined to the uterovaginal and lower urinary tract compartments. Cervical cancer spreads locally within the uterovaginal compartment derived from the Müllerian anlage. Compartment transgression is a relatively late event in the natural disease course associated with distinct phenotypic changes of the tumor. Compartmental tumor permeation suggests a new definition of local treatment radicality.