

What is your diagnosis?

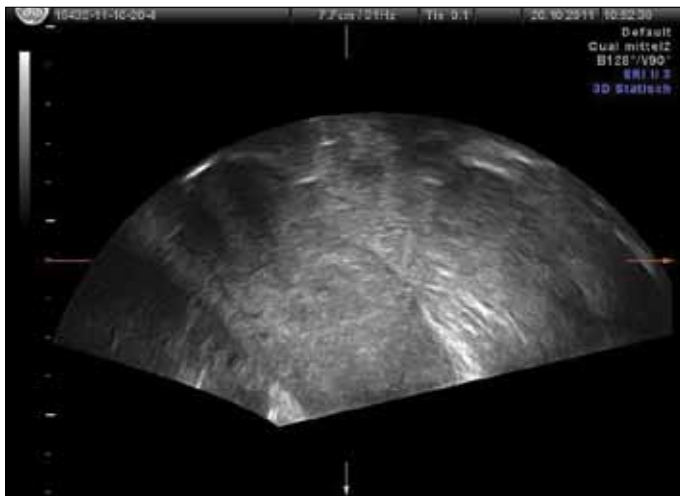


Figure 1. Sagittal transvaginal two dimensional sonography, showing a diffusely enlarged cervix with heterogeneous echogenicity. The tumor margins are clearly delineated

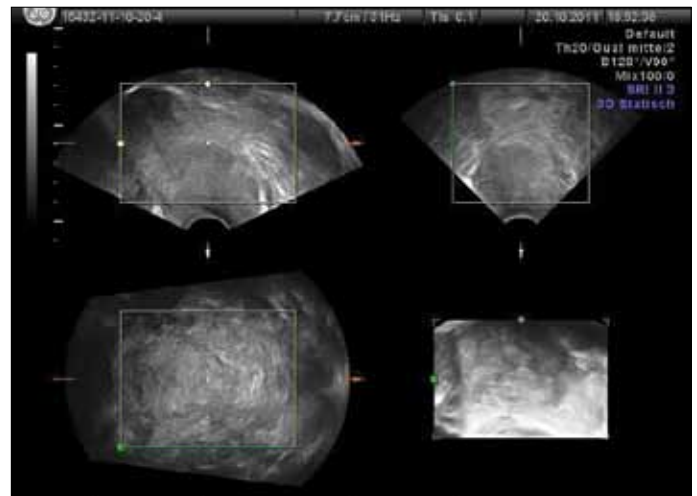


Figure 2. Three-dimensional sonography of barrel shaped cervical cancer in multiplanar sections

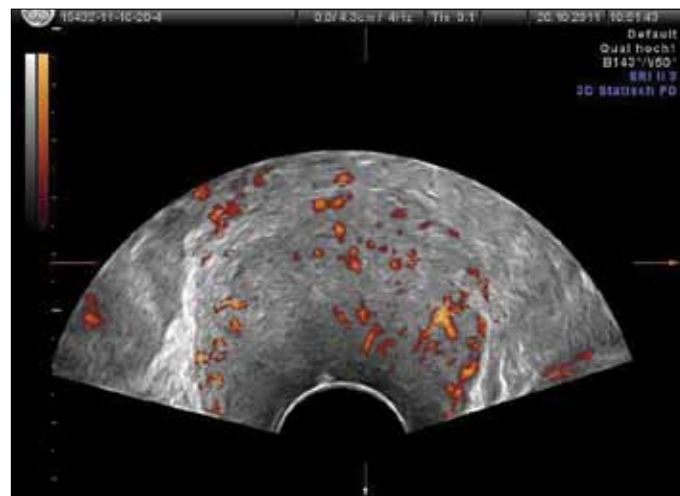


Figure 3. Three-dimensional power Doppler vascularisation of cervical cancer

Cancer of the cervix is the second most common cancer in women worldwide, with about 500 000 new cases and 250 000 deaths each. Among these case 80% occur in low-income countries. Cervical cancer cases (99%) are linked to genital infection with human papillomavirus, which is the most common viral infection of the reproductive tract.

Ultrasound has been used to evaluate the size and locoregional extent of the tumor. In the early stage of cervical carcinoma, the primary lesion is difficult to depict with any imaging modality, including transvaginal US. With disease progression, the barrel shaped bulky cervical cancer can appear as a hypoechoic lesion with well defined margins, or the disease may manifest as an enlarged cervix with heterogeneous echogenicity (see the images).

The prognosis for patients with cervical cancer is markedly affected by the extent of disease at the time of diagnosis. The majority (>90%) of these cases can and should be detected early through the use of the Pap test and human papillomavirus (HPV) testing. The current death rate is far higher than it should be, which shows that, even today, the Pap test and HPV testing are not done on approximately 33% of eligible women (1). The clinical stage, however, as a prognostic factor must be supplemented by several gross and microscopic pathologic findings in surgically treated patients. These include: volume and grade of tumor, histologic type, lymphatic spread, and vascular invasion. In a large surgicopathologic staging study of patients with clinical stage IB disease reported by the Gynecologic Oncology Group, the factors that predicted most prominently for lymph node metastases and a decrease in disease-free survival were capillary-lymphatic space involvement by tumor, increasing tumor size, and increasing depth of stromal invasion, with the latter being most important and reproducible (2, 3). In a study of 1.028 patients treated with radical surgery, survival rates correlated more consistently with tumor volume (as determined by precise volumetry of the tumor) than clinical or histologic stage (4). The preoperative diagnosis of tumor geography may play an important role in management of cervical cancer. Trimboş et al. (5) evaluated the prognostic significance of tumor geography, defined as

exophytic or barrel-shaped growth, in bulky (>4 cm) cervical cancer. For this purpose, they evaluated four hundred women with cervical cancer, treated by primary radical hysterectomy. In 58 patients, the tumor was defined as bulky exophytic and in 51 patients as bulky barrel shaped. There were no differences among these groups in terms of operating time, blood loss during surgery or complications at 3 or 6 months postoperatively. Bulky exophytic tumors had an identical overall survival as compared to small-diameter (<4 cm) tumors. The overall survival of bulky barrel-shaped tumors was significantly worse. The same was found for disease-free survival.

As the tumor geography may predict the outcome, preoperative ultrasound should be performed in all patients with suspected cervical cancer.

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