Endorectal sonography in the management of rectal villous tumours

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Abstract. Thirty-seven patients with rectal villous tumours were investigated by endorectal sonography to assess the integrity of the rectal muscularis propria at the tumour level. In four cases assessment of invasion was impossible. In 24 patients, endosonography revealed an ultrasonically superficial lesion not infiltrating the muscular layer. This was confirmed either, in the case of laser treatment, by the absence of malignant recurrence during the follow-up period or by histological examination after surgical resection. In nine patients, endosonography showed infiltration of the muscular layer. This was histologically confirmed in five operated patients. In the remaining four, laser destruction was performed: in two, a rectal adenocarcinoma was present 3 and 6 months later, respectively. These findings show that endosonography has a place in the management of rectal villous tumours, demonstrating invasive cancer in cases where other forms of assessment were wrongly reassuring.

A clinically, endoscopically and histologically benign rectal villous tumour is often treated by laser destruction [1-3]. The criteria for choosing a conservative therapy remain imperfect because adenocarcinoma can be overlooked by these methods.

The goal of this study has been to determine the place of endorectal sonography for confirmation of benignancy in a group of patients having rectal villous tumour considered to be benign.

Patients and methods

All patients having a rectal villous tumour were studied prospectively between January 1985 and September 1989. The criteria for inclusion in this study were as follows:

- A digitally palpable tumour without induration or infiltration and any villous lesion mobile on the rectal wall where the tumour was accessible to palpation.
- Lower border of villous tumour less than 15 cm from the anal margin endoscopically.
- On histological examination, no signs of malignancy on biopsies. Dysplasia, whatever the grade, has not been considered as malignancy [4].

In all patients before any treatment a transrectal ultrasound was performed by using a 7 MHz radial scan (Bruel and Kjaer, 1846).

Before sonographic examination a rectoscopy demonstrated the villous tumour. The ultrasound probe was then introduced under rectoscopic control with the tumour in view. The rectal wall was examined, first at the tumour site and then throughout the length of the rectum, looking for signs of infiltration into the muscular layer.

The ultrasound interpretation of the rectal wall was that suggested by Boscaini [5] and Hildebrandt et al. [6], in which two hypoechoic layers are recognised, one consisting of mucosa and submucosa and the other of muscularis and possibly serosa. All enlarged pararectal lymph nodes demonstrated sonographically were considered to be metastatic.

During the examination, tumours were classified as either a superficial lesion or a suspect lesion. When the muscularis was intact and there was no evidence of lymph nodes, the villous tumour was considered to be ultrasonically benign (Group A) (Fig. 1). When endorectal sonography demonstrated infiltration or enlarged lymph nodes, the tumour was considered ultrasonically malignant (Group B) (Fig. 2).

Treatment was either by surgical resection or a laser destruction of the tumour. The choice was made by the physician responsible for the patient’s care, based on the clinical assessment according to criteria such as size and localisation of the tumour as well as on the patient’s general condition.

All patients who did not have a complete histological analysis of the tumour by means of rectal resection were followed-up by examinations at 3 months, 6 months and one year including clinical status, endoscopy, histology and endorectal sonography.

Ultrasound findings were correlated with histology where there had been an excision, or following laser treatment the presence or absence of recurrence at follow-up.

Results

Thirty-seven patients have been included in this protocol. The tumour distribution along the length of the rectum is shown in Fig. 3. The results of endorectal sonography and the treatment used are shown in Table 1. In four cases using endorectal sonography we were unable to visualise the tumour pedicle because of a large intralu-
Fig. 1. Sonogram of a rectal villous adenoma with no sign of extension into the muscularis

Fig. 2. Rectal adenocarcinoma with infiltration of the muscular layer. 1, tumour; 2, interface between submucosa and muscularis; 3, muscularis

Fig. 3. Distribution of villous tumours along the length of the rectum

Table 1. Treatments performed according to the sonographic results

<table>
<thead>
<tr>
<th></th>
<th>Laser treatment</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal muscularis on ERS (group A)</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Infiltrated muscularis on ERS (group B)</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sonographic failure</td>
<td>4</td>
<td>~</td>
</tr>
</tbody>
</table>

ERS = endorectal sonography

minal tumour component. These patients were treated by laser tumour destruction without any recurrence at one year.

In Group A, eight patients had an anterior resection combined with a low colorectal or coloanal anastomosis. Histology of the resection specimen confirmed the superficial nature of the tumour with respect to the muscularis. One specimen contained a focus of adenocarcinoma infiltrating the submucosa. Among the 16 laser treated patients, 3 developed a recurrence of their villous tumour. A repeated assessment based on clinical examination, endoscopy and histology confirmed that these recurrences were benign. They were then treated by a further laser vapourisation.

In Group B, five patients were operated on. Histology confirmed the ultrasound results in each case by demonstrating adenocarcinoma infiltrating the muscularis. One of the patients had metastatic lymph nodes that were overlooked during endorectal sonography. Among the four patients not operated on in this group, two developed recurrent tumour at the initial site of the villous tumour and, respectively, 3 and 6 months after laser treatment, adenocarcinoma was present on biopsies. A rectal resection was performed on these two patients. Histology confirmed the presence of a muscular layer infiltrated by tumour. The last 2 patients from this group do not show any signs of rectal tumour 12 and 18 months after laser treatment of their villous tumour.

Discussion

Adenocarcinoma in a villous tumour is found in 30% to 42% of all cases [7-10]. There is a relationship between the risk of neoplasia and the size of the lesion [7, 11-13], and they can be multifocal [14].

The depth of tumour infiltration is very variable. Nine to 23% of all villous tumours [10, 11, 15] are superficial adenocarcinoma, not infiltrating through the muscularis mucosa and in these cases lymph node metastasis is exceptional. The prognosis of these tumours is similar to that of benign tumours [10, 16].

There can also be infiltration of the submucosa. The frequency is estimated to be from 5% to 25% of all villous tumours [15, 17]. They are in effect rectal cancers and should be treated as such.

Detecting these neoplastic foci is difficult. The simple clinical examination includes only those tumours accessible to digital palpation. Nivatvongs in a highly selected