

Hepatic and Skin Metastases after Laparoscopic Radical Prostatectomy for Prostate Cancer

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Abstract

Between 2004 and 2006, 50 radical prostatectomies were performed in our department, 46 of them through a laparoscopic approach addressed to early stage cancer (T1a,b,c and T2a,b,c N0 M0). We present the case of a 63 year old patient, who was initially diagnosed with prostate cancer in T1bN0M0 stage, Gleason score 8 and later presented atypical hepatic and trocar site metastases. This particular evolution of the case can be explained by the high value of the Gleason score and by the extension into microvessels observed on the sample prelevated by prostatectomy. The rarity of this atypical metastases and its association, the diagnostic and therapy problems are the reasons for the detailed presentation of this case.

Key words

Prostate cancer - atypical metastases - hepatic metastases - trocar site metastases

Introduction

Prostate cancer is a major cause of morbidity and mortality worldwide. In Europe, prostate cancer represents 11% of malignancies in males and 9% of cancer related deaths (1,2). This malignancy is characterised by high levels of prostate specific antigen (PSA), which is very useful for early diagnosis. Evolution possibilities are that prostate cancer spreads through the lymphatic vessels and frequently to the bones, though hepatic metastases are rare. Radical treatment for the intraprostatic stage T1-2, N0M0 is represented by radical prostatectomy by means of an open or laparoscopic approach or radiation therapy (external or

interstitial). In local advanced stages (T3-4, N+), or in metastasis stage, treatment is hormonal with or without external beam radiation therapy.

Case report

A male patient aged 63 was admitted to our department for an acute urinary retention and a Foley urinary catheter was inserted. Serum PSA level 4 months before this event had been 2.7ng/ml. At the time of hospitalization, the PSA value had risen to 3.5 ng/ml in an acute urinary retention context, and the Foley catheter was inserted and there was increased prostate volume. At digital rectal examination, the prostate was enlarged, well limited and with a smooth surface. Abdominal ultrasound showed enlarged prostate (about 58 cc), without obstructive changes. We performed transurethral resection of prostate (TURP) in hypopressure obtaining good functional results.

Biopsy revealed prostate adenocarcinoma in more than 5% of the resection samples, with papilar and microacinar patterns and secondary- comedo type (Gleason scor 3A+5). The stage was in situ carcinoma, without signs of intravascular and perineural extension. The histopathological results after TURP allowed us to estimate the tumor stage: pT1b.

We made some additional investigations: transrectal ultrasonography, abdominal and pelvic computerized tomography, bone scan, chest X ray. These investigations did not show lymphatic pelvic and lomboaortic spread, nor visceral metastases.

Consequently, the therapeutic options were radical prostatectomy or radiation therapy, the patient's option being surgical therapy. We performed the laparoscopic radical prostatectomy, Montsouris technique, without intraoperative complications (3). The postoperative evolution had no complications and the urinary catheter was extracted two weeks after surgery. Urinary continence recovered in 6 months.

Histopathological examination revealed prostate adenocarcinoma with 3A dominant pattern and 5A secondary; there was also significant in situ carcinoma and high grade PIN,

venous invasia, perineural spread, few lymphocytes, no capsular penetration, no seminal vesicle nor deferens involvement. Conclusion: prostate adenocarcinoma, Gleason score 8 pT2cN0M0V1.

Six weeks postoperatively, the PSA decreased to 0.3ng/ml, and 3 months after, it had risen to 7.5ng/ml. The patient was sent to the Oncology Institute for complementary therapy (external beam radiation) of a local recurrence.

Evaluation at 9 months after surgical therapy evidenced altered liver function tests (AST = 324 U/L, ALT = 247 U/L), cholestasis sindrom (alkaline phosphatase = 544 u/l, GGT = 1766 U/l), biliary retention (total bilirubin = 2.6 mg/dl, conjugated bilirubin = 1.8 mg/dl). The PSA was increased significantly to 433 ng/ml. Abdominal ultrasound showed multiple tumors in the liver (Fig.1) and iliac and retroperitoneal enlarged lymph nodes.

The viral markers (hepatitis B, C viruses and CMV) were negative and tumor markers (CEA and alphafetoprotein) in normal ranges. Colonoscopy did not evidence any tumors. Liver biopsy showed metastases from poor differentiated prostate adenocarcinoma (Fig 2). At this time, on the left lateral site of the laparoscopic approach, a tumor of 2 x 2 x 1 cm was detected.

We performed a metastasectomy from the left lateral site of the laparoscopic approach. Hystological examination confirmed the presence of prostate adenocarcinoma on the resection sample.

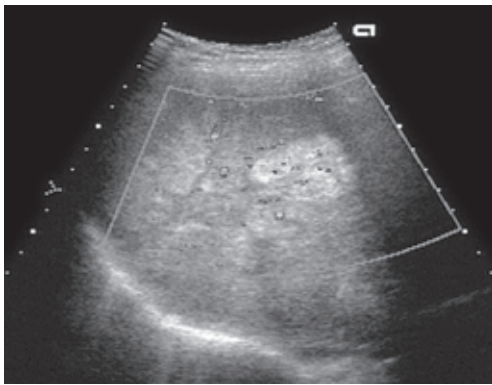


Fig. 1 Abdominal ultrasound – multiple liver metastases of prostate adenocarcinoma.

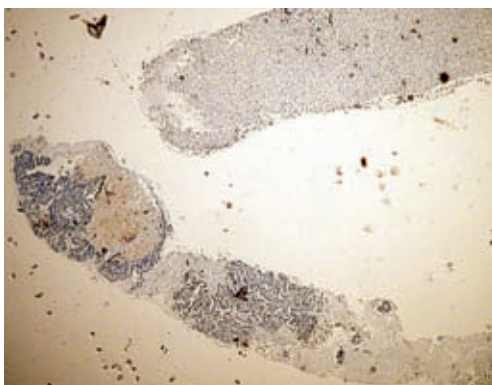


Fig.2 Liver metastases of prostate adenocarcinoma - immunofenotyping with PSA.

Considering the metastatic stage of the disease, we decided that the ablative palliative treatment (bilateral orchiectomy) associated with Bicalutamide 1tb/day would be the adequate therapy for this patient. Fifteen months after radical therapy and after 6 months of hormonal treatment, the PSA level decreased to 53.6 ng/ml. Cytolysis and cholestasis syndromes were partly resolved.

Discussion

The case presented here raises at least two problems. The first concerns the therapeutic decision for prostate cancer diagnosed after a TURP. The second is regarding the prostate adenocarcinoma with atypical metastases such as that of the liver (the liver being rarely the place for the spread of this type of cancer) and from the site of the laparoscopic approach.

The first question is whether radical treatment (open or laparoscopic) should be indicated after TURP in prostate cancer. The problems that arise relate to the possibility that TURP could spread the tumor cells, the difficulty that the surgeon could have in making a prostatectomy after TURP and lastly the morbidity that might be important after TURP.

Epstein et al made a separate analysis of T1b stage (presence of prostate cancer in more than 5% of prostate tissue obtained at TURP) and they stated that there is always remnant tumor tissue, 26% presenting capsular extension and 10% seminal vesicles extension (4).

Mansfield and Stephenson tried to answer two questions in a study published in 1996: the first – does TURP assist the spread of tumor cells, increasing the rate of progression and mortality? The conclusion was that the risk is small and of no significance. The second question was whether TURP does increase the morbidity of radical treatments (radical prostatectomy or radiation therapy); the answer was also that the morbidity was not increased by the initial TURP (5).

The possibility that TURP could help the spreading of prostate cancer was evaluated in a study made on 379 patients, who were compared with another group who were diagnosed after prostate needle biopsy. There were no differences between the two groups concerning the rate of metastatic tumors: the risk of distant metastases after transurethral resection of the prostate versus needle biopsy in patients with localized prostate cancer (6).

There are many studies which have evaluated patients with radical prostatectomy after TURP. In a study made in 1994, Ramon observed that retropubic prostatectomy is more difficult after an anterior endoscopic procedure (7). A retrospective study performed on 5156 patients with TURP, evaluated 86 patients with prostate cancer accidentally discovered (T1a and T1b). Radical prostatectomy was indicated in patients with life expectancy of more than 10 years. The evolution of these patients was without local recurrence in 5 years of follow up (8).

Another similar study evaluated 30 patients with prostate cancer diagnosed after TURP (7 – T1a, 23 – T1b). For 22 of the patients, the postoperative staging was different: 10

patients were diagnosed with pT2N0M0 stage, 11 patients with pT3N0M0 and one patient with pN1. They stated rectal lesion in one patient as an intraoperative incident (9).

On the other hand, in a study made on 16 patients with radical prostatectomy after TURP, Bandhauer and Senn reported a rate of 100% of erectile dysfunction as a consequence of nerve sparing. One patient had a rapid tumoral evolution dying two years later and another patient had local recurrence. Nevertheless, the authors concluded that prostatectomy after TURP might be performed depending on morbidity (10).

The second problem is that of prostate cancer with low PSA and that of atypical metastases such as in the liver (liver is uncommon in the distance spreading of prostate cancer) and the skin from the trocar site. In the presented case, liver metastases occurred shortly after radical surgery, despite the small level of PSA, simultaneously with skin spreading. We could not find a similar case in the literature.

The problem of prostate cancer in metastatic stage and normal level of PSA (or PSA < 10 ng/ml) has been studied in a group of 33 men with PSA level < 10 ng/ml and metastases (two patients having visceral metastases). They observed that the survival of these patients was lower, with a shorter duration of response to hormonal therapy of first line, no response at second line hormonal therapy, but with response to chemotherapy (11).

According to a retrospective study on 608 patients with prostate adenocarcinoma evaluated through CT, they found 23 lymphatic nodes spreading and 22 atypical extranodal metastases, the most uncommon being those from the lung (4), liver (3), brain (2), eyes (1) and adrenals (1). Presence of these atypical metastases is related to an advanced disease and knowing their manifestations permits an accurate diagnosis, in order to make a precise staging and offer the right treatment (12).

On the other hand, a study based on the routine autopsy of 19316 men over 40 years identified 1589 persons (8.2%) with prostate cancer, 25% of them with liver metastases, a greater percentage compared to studies based on imaging methods. Furthermore, this study revealed that the most frequent metastases in prostate cancer were in the bones, lungs and liver (13).

Conclusion

To conclude, the characteristic feature of our case is the uncommon site of metastatic disease in a prostate cancer

with a preoperative normal value of PSA and the association with the spreading at the laparoscopic trocar site. The cause of this peculiar evolution could be the heightened value of the Gleason score (Gleason score 8) and the extension into the microvessels evidenced by the prostatectomy sample.

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