

Case report of significant bleeding associated with prostate brachytherapy

Anthony T. Corcoran, MD,¹ Ryan P. Smith, MD,² Ronald M. Benoit, MD¹

¹Department of Urology, University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania, USA

²Department of Radiation Oncology, University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania, USA

CORCORAN AT, SMITH RP, BENOIT RM. Case report of significant bleeding associated with prostate brachytherapy. *The Canadian Journal of Urology*. 2009;16(3):4682-4683.

Prostate brachytherapy is a minimally invasive option in

treating prostate cancer, usually with little risk of surgical morbidity. This reports a case of significant bleeding associated with the procedure of prostate brachytherapy.

Key Words: prostate brachytherapy, hematoma, complications, hemorrhage

Introduction

Prostate brachytherapy is a minimally invasive option for treatment of clinically localized prostate cancer. Patients are drawn to prostate brachytherapy in part due to its low risk of complications and the quick return to full activity after the procedure. Blood loss associated with prostate brachytherapy is usually minimal. The present study reports a case of significant bleeding associated with prostate brachytherapy.

Case report

The patient is a 67-year-old man with a clinical stage T1C, Gleason 3 + 3 = 6 adenocarcinoma of the prostate with a pretreatment PSA of 6.2. He elected to proceed with prostate brachytherapy for treatment of his disease. The procedure itself was uncomplicated. Twelve peripheral needles and four central needles were placed, and a total of 62 seeds were placed. Cesium-131 isotopes with a radioactivity of 2 u were implanted with a planned dose of 115 Gy. No unusual bleeding was encountered during the procedure. To keep the scrotum away from the perineum, our practice is to fix the dependent scrotum to the anterior abdominal wall with

a single 2'0 silk suture. No bleeding was encountered when this suture was placed or removed. The patient had an uneventful recovery and was discharged home approximately 8 hours after completion of his procedure. The patient had undergone a CT scan of the pelvis to calculate dosimetry prior to discharge, and this study did not demonstrate any evidence of pelvic or perineal bleeding. During his ride home, he changed position and subsequently noticed scrotal discomfort and enlargement. The patient contacted us the evening of the procedure and described scrotal edema and ecchymosis, and emailed photographs of his scrotum for our review, Figure 1. The patient complained of right scrotal discomfort which tracked superiorly into the right inguinal region. He was treated conservatively and was followed closely with serial examinations. On physical examination, the hematoma tracked into the right inguinal canal, and the ecchymosis involved not only the scrotum but the right inguinal region, the penis, and both anterior and medial thighs, Figure 2. He had minimal change in his hematocrit, which decreased from 37.2% preoperatively to 35.7% postoperatively. The patient had not been on any anticoagulation or antiplatelet agents. Laboratory studies did not demonstrate coagulation disorders or liver dysfunction. By 1 month after his procedure, the patient's ecchymosis and discomfort had largely resolved except for firm right hemiscrotum with the superior extent of the induration extending to the right inguinal canal, Figure 3. He has had no other significant complications related to his prostate brachytherapy.

Accepted for publication January 2009

Address correspondence to Dr. Anthony T. Corcoran, Department of Urology, 3471 5th Avenue, Suite 700, Kaufmann Bldg., Pittsburgh, PA 15213 USA



Figure 1. Eight hours following seed implantation.

Discussion

Prostate brachytherapy has proven to be an effective treatment option for men with clinically localized prostate cancer. Patients are attracted to this procedure in part due to its minimally invasive nature and the quick return to full activity. The present study reports a case of a large scrotal hematoma which caused significant discomfort, although transfusion was not necessary. Hematoma formation following brachytherapy has been reported, but only when an open technique was used.¹ The source of the bleeding in the current report is unclear. A probable source would be the perineal needle placement. The patient had 16 needles placed, and often several passes of a needle are required to obtain proper needle location. An injury to a branch of the perineal artery in the perineum may have led to blood tracking superiorly into the scrotum. Another possibility is the bleeding was a result of the scrotal suture which was placed to keep the scrotum out of the field. A branch of the posterior scrotal artery could have been injured during the placement of the



Figure 2. Six days following seed implantation.



Figure 3. One month following seed implantation.

posterior scrotal suture. The fact that the patient did not have significant perineal hematoma (although he certainly had perineal ecchymosis), supports this theory. Also unusual is the delayed onset of the bleeding as it occurred approximately 9 hours after the procedure. The size and firmness of the hematoma, as well as the fact that the hematoma tracked into the inguinal region and the ecchymosis involved the thighs, makes it quite likely the bleeding was arterial. A small arterial injury was likely created at the time of the procedure, but a clot prevented significant bleeding. When the patient shifted position on his ride home, the clot may have become dislodged and the bleeding occurred. It is our routine to obtain a CT of the pelvis the day of the procedure for dosimetric purposes, and this study demonstrated no evidence of pelvic bleeding, supporting our theory that the bleeding was from a subcutaneous perineal or scrotal artery. The patient was not found to have any bleeding diathesis. Although the etiology of the bleeding in our patient is not known for certain, it is likely the patient experienced delayed bleeding resulting from either perineal needle placement or placement of the scrotal suture. The potential for bleeding from perineal needle placement is unavoidable. In our experience of well over 500 prostate brachytherapy cases, we have not had bleeding from the scrotal suture placement prior to this episode. In the future we will continue to use a suture to displace the scrotum, but will take care to place this suture as superficially as possible so as to decrease the risk of causing another scrotal hematoma. □

References

1. Kumar PP, Bartone FF. Transperineal percutaneous I-125 implant of prostate. *Urology* 1981;17(3):238-240.