Metastasis of Testicular Carcinoma in The Inguinal Region

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ABSTRACT

A standard protocol for the management of inguinal metastasis from testicular cancer still has not yet been established. Metastasis of testicular cancer to inguinal lymph node rarely occurs, particularly in patients without any prior surgery in inguinal and scrotal region. Daugaard reported 2% incidence of inguinal metastasis for stage 1 testicular cancer in 5-year period.

We reported a case of inguinal metastasis from residual testicular cancer with a large size of mass. The case had also been counted as advanced stage since it had further metastasis to the lungs. For this case, surgical treatment of residual tumor excision had been performed prior to the chemotherapy considering a quite large size of tumor mass, which may easily bleed and causing anemia to the patient. Furthermore, we considered that chemotherapy treatment prior to surgical excision will only provide partial effect on the tumor. After the surgery, a 4-cycle combined chemotherapy was administered despite the delay of chemotherapy treatment resulting in residual mass in inguinal region. In fact, the post-surgical chemotherapy treatment in this case has demonstrated relatively good response.

Key words: testicular cancer, Inguinal, excision, chemotherapy

INTRODUCTION

Testicular cancer is a very rare cancer, 1% of all cancers is in male. However, this cancer occurs most commonly in men between the age of 15 and 35 years and it is one of solid cancers that can be treated by multimodality treatment. There have been dramatic changes in survival rate due to combination techniques, including effective diagnostic techniques, increased serum tumor markers, multi-drug chemotherapy regimens and modification of surgical technique, which may decrease the mortality rate from 50% in the 70’s into less than 5% at the end of 90’s. The most common histopathological types are seminoma with incidence of 30 - 60%; pure embryonal carcinoma 3 - 4%, although it include 40% of nonseminoma; 5-10% teratoma and 1% pure choriocarcinoma. Tumor of more than 1 histopathological type is considered as a distinct entity and it is known as mixed germ cell tumor, which may reach 60% of all germinal tumor cell. Data of Dharmais Cancer Hospital in the period of 2002-2004 demonstrated similar incidence of such histopathological types, i.e. seminoma (47.5 %), non-seminoma (40 %) and mixed germ cell tumor (12.5%). Two hospitals in Jakarta (Cipto Mangunkusumo Hospital and Dharmais Cancer Hospital) have reported as many as 149 new cases of testicular cancer in the last 10-year period.

Metastasis of testicular cancer to inguinal lymph node rarely occurs, particularly in patients without any prior surgery in inguinal and scrotal region. Daugaard reported 2% incidence of inguinal metastasis for stage 1 testicular cancer in 5-year period. The management of inguinal metastasis from testicular cancer is still uncertain.

In this article, we report a case of inguinal metastases from testicular cancer and it has reached an advanced stage with pulmonary metastasis. Surgical excision of residual tumor has been performed prior to the chemotherapy treatment considering the large size of tumor mass.
CASE ILLUSTRATION

A 27-year-old man came with a complaint of enlarging mass on his right inguinal region since 2 months before hospital admission. The mass easily and odorously. He also noted an abdominal mass. There was no complaint of voiding and defecation. One year before the hospital admission, the patient had undergone orchiectomy by indication of right testicular tumor in the size of an adult fist at Salak Hospital, Bogor. Orchiectomy was performed by transingunal approach which was extended to scrotum. The result of pathology anatomy examination at Salak Hospital, Bogor demonstrated a yolk sac tumor, and after being re-examined at Department of Pathology Anatomy, Cipto Mangunkusumo Hospital, we found a mixed germ cell carcinoma. The patient was suggested to have chemotherapy treatment, but he refused.

Hb 10.5 g%, leukocytes 11,900/ml, platelets 310,000/ml, albumin 2.9 gr/dl, alpha-fetoprotein 1950 IU/ml, beta hCG 425 mIU/ml, and LDH 487 U/L. Radiographic findings did not reveal any metastasis. CT scans of the abdomen showed a mass sized 27 x 10 x 12 cm infiltrating the rectus abdominal muscle, pelvis and scrotum as well as enlarged para-aortic lymph node, i.e. 4 x 1.5 x 1.5 cm in size.

The patient’s condition when he was admitted to the hospital was fully alert, Karnoffsky score 60 – 70, body weight 49 kg, blood pressure 120 / 70 mmHg, pulse rate 80 x/minute, respiratory rate 18 x/minute, and the conjunctiva were slightly pale. On physical examination we found vesicular breath sound, dullness on percussion and no rales. The abdomen was flat, supple, no pressure pain and normal bowel sound. On local examination of right inguinal region, there was a mass of 40 x 30 x 20 cm in size which extended to the right hemiscrotum, no distinct edge, easily bled, and there was suppuration. The laboratory examination revealed following results, i.e.

The preparation of surgery in this patient was quite difficult because he had anemia due to the tumor bleeding and hypoalbuminemia. In this patient, a simultaneous surgery with Department of Plastic Surgery was performed, i.e. tumor excision covering the defect by tensor fascia-lata flap and abdominoplasty on 10th January 2005. The result of pathology anatomy examination (no 0500180) revealed mixed germ cell tumor with features of seminoma, endodermal sinus tumor, embryonal carcinoma and choriocarcinoma. The edge and base of excision were not tumor-free. There was invasion to the lymph node. On day 20th post-surgery, debridement and Split Thickness Skin Graft were performed by the Department of Plastic Surgery because there was necrotic tissue on the flap.
Afterward, the patient was managed to have chemotherapy of BEP (Bleomycin, Etoposide, Cisplatin) which had been delayed approximately 1 month due to administrative problem. Such delay caused the arising of residual tumor on the wound of right inguinal region. Chemotherapy was begun on March 7th, 2005.

leukocytes 8100/L, platelets 616,000/L, alpha-fetoprotein 3.3 IU/mL, beta hCG 2 mIU/ml, and LDH 144 U/L. The chest X-ray after the third cycle revealed 4 nodules on the right lung and 1 nodule on the left lung with the biggest diameter of 2 cm.

Figure 4. The wound condition before chemotherapy

Figure 5. The chest X-ray before chemotherapy

In the preparation period of chemotherapy, the patient’s general condition was good and the Karnofsky score was 90. On the local examination, there was easily-bled and odorous ulcer (on Figure 5). The laboratory examination results were: Hb 12.4 g%, leukocytes 6700/L, platelets 550,000/L, alpha-fetoprotein 1821.0 IU/ml, beta hCG 140370 mIU/ml and LDH 490 U/L. Radiographic findings revealed 12 nodules on the right lung and 5 nodules on the left lung with the biggest diameter of 3 cm.

The patient received 4-cycle chemotherapy treatment of bleomycin, etoposide, cisplatin. During chemotherapy, there were some complications such as nausea, vomiting, leukopenia and alopecia. However, there was no delay among chemotherapy cycles. After completing chemotherapy, the patient’s condition was good. Local examination revealed no ulcer. The laboratory results were as follows: Hb 11.5 g%,

Figure 6. The chest X-ray after the third cycle of chemotherapy

Figure 7. The wound condition after chemotherapy

We suggested the patient to visit us within on the next 1 month period for further evaluation. The patient came for another visit 1 month later with good general and local condition. We recommended him to have tumor seromarker examination and repeat abdominal and pelvic CT scan. However, the patient had never come back again because he felt healthy and could not afford the cost. The patient died one year later after having complained of dyspnea.

DISCUSSION

Dougaard reported incidence of inguinal metastasis of 2%. Based on histological types, non-seminoma cancer has higher incidence of inguinal metastasis (4.9%) compared to seminoma (0.5%). Klein et al. reported that there have been only 22 cases of metastasis for inguinal lymph node from 1948 to 1982 and there was only 1 patient who had not had previous inguinal
surgery. (Adapted from Doughaard et al).³ Metastasis to inguinal lymph node may be caused by scrotum involvement or tunica vaginalis by the primary tumor, previous inguinal or scrotal surgery or retrograde spreading of lymphatic system by accumulation of massive lymph node.¹ It also possibly includes spermatic cord involvement (juniculus spermaticus) by the infiltrating tumor, which are the most common cause in patients who had not undergone any previous surgery. Therefore, in order to reduce such risk, the pathologists may also perform examination for spermatic cord. Other cause includes spillage of tumor cells. Inguinal incision faraway from testis will reduce the risk of tumor incision and spillage of tumor cells and contaminate to the scrotum and other lymphatic drainage area (such as inguinal lymph nodes).⁴ This patient had not had any treatment on his inguinal region before and the surgery was performed by trans-inguinal approach. Therefore, the metastasis may possibly result from the infiltrating spermatic cord, tunica vaginalis or retrograde spread of lymphatic system due to lymph node accumulation.

As the chemotherapy for management of testicular cancer has been developed, surgical procedure will only be performed in residual case following chemotherapy, in the cases which show persistent high level of tumor marker during chemotherapy or in patients with delayed relapse episode.⁵⁶ Based on general consensus, primary treatment for advanced non-seminoma testicular cancer includes chemotherapy with 3 or 4 cycles depending on the patient’s prognosis classification and will be followed by excision of residual tumor.⁷ The management of inguinal metastasis from testicular cancer is still uncertain and there has not been any protocol on the role of tumor excision for locally advanced cases of testicular tumor. Stein et al reported that excision of inguinal lymph nodes with-or without therapy is an alternative treatment for inguinal metastasis case.⁸ Van Ahlen et al recommended adjuvant chemotherapy followed by tumor excision.⁹ For this case, tumor excision was performed first prior to the chemotherapy. Such an action was taken considering the enlarging nature of tumor, which also easily bled and caused anemia in this patient. Moreover, chemotherapy will exert partial effect to such large-sized tumor mass.

Extensive surgical procedure will be associated with greater complication; therefore, good knowledge and understanding on possibly dangerous condition as well as surgical plan by a team with other experienced specialists are necessary.⁶ This case showed residual tumor mass which infiltrated m. Rectus abdominis; therefore, the surgery was performed simultaneously with the Plastic Surgery Department to cover the defect on abdominal wall due to extensive excision of tumor mass.

The International Germ Cell Cancer Collaborative Group (IGCCCG) has classified patients into 3 groups based on the tumor location, metastasis and seromarker.⁷ Based on the classification, the patient had poor prognosis because the beta hCG level was over 50,000 mIU/ml. Therefore, the standard chemotherapy treatment includes combination of BEP (bleomycin, etoposide and cisplatin) as many as 4 cycles. There was a 4-week delay for chemotherapy treatment following the excision of tumor mass; therefore, there was local recurrence on the wound. However, chemotherapy treatment has provided a good result, i.e. diminution tumor mass on surgical scar, seromarker which has returned to normal limit, and reduced lesion size of pulmonary metastasis.

In advanced cases, the extent of tumor spreading is associated with successful treatment and survival rate. Recurrence following the curative treatment is common during the first 2-year period. Therefore, a more frequent and intensive follow-up should be carried out during this period. Based on IGCCCG, total survival rate of advanced non-seminoma testicular cancer is only about 48%⁶. Therefore, follow-up is very important for this case. Actually, the patient has been followed-up for 1 month period following the chemotherapy, which showed good condition and further examination of seromarker and CT scan has been recommended. In advanced case, seromarker examination is very important, followed by physical examination and chest X-ray. CT scan is recommended to be performed annually.⁷ For this case, abdominal and pelvic CT scan was necessary in order to evaluate the effect of chemotherapy on para-aortic lymph nodes, which was hardly performed by physical examination.

CONCLUSION

We have reported a case of advanced non-seminoma testicular cancer with inguinal metastasis, which has a quite low incidence. For this case, surgical treatment has been performed first prior to 4-cycle BEP chemotherapy. Although it appears that the treatment has given a relatively good effect, the follow-up did not run well and the patient died a year later.

REFERENCES