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Case Report

Lymphoma as Inguinal Hernia

Mantle Cell Lymphoma Mimicking as Irreducible Inguinal Hernia – A Rare Case Report

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Abstract: Lymphomas are malignant neoplasms originating from bone marrow and lymphatic structures resulting in the proliferation of lymphocytes. It is divided into Hodgkin's and Non-Hodgkin's lymphoma. Among Non-Hodgkin's lymphoma, diffuse large B cell type is the most common, and the follicular variant is next. Mantle cell lymphoma (MCL) is one of the least common varieties of Non-Hodgkin's lymphoma. It is a case of mantle cell lymphoma presented as an irreducible inguinal hernia. This case report aims to tell us that when it comes to inguinal hernias, most of them do not concentrate on general examination. In this case, it's clear that even if a patient present with an inguinal hernia, it is mandatory to rule out other common clinical findings to prevent misdiagnosis. Even though previous similar cases described were of lymphomas identified in the hernia sac along with the hernia component, it is the first report of mantle cell lymphoma, which presented as an inguinal swelling mimicking an irreducible inguinal hernia. This 72-year male patient, a farmer by occupation, complained of swelling and pain over the right groin. On examination, we found multiple enlarged inguinal lymph nodes raised the suspicion of lymphoma. We proceeded with a CT abdomen and chest, followed by surgery, and mantle cell lymphoma was diagnosed after immunohistochemistry results. The patient was referred for chemotherapy, and a long-term follow-up was done. The patient was doing good. Furthermore, it highlights the significance of the role played by surgeons in screening by sending only macroscopically unusual specimens for microscopic analysis. Here, we present a case of primary non-lymphoma Hodgkin's of the sigmoid colon that manifested as an inguinal hernia that was completely irreducible.

Keywords: Mantle cell lymphoma, irreducible inguinal hernia, hodgkin's lymphoma, non-hodgkin's lymphoma, immunohistochemistry.

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1. INTRODUCTION

MCL is a distinct subtype of non-Hodgkin's lymphoma with t (11;14) (q13; q32) chromosomal translocation and Bcl-1/PRAD-1 gene with overexpression of cyclin D1. It is derived from CD5-positive B cells within the mantle zone (CD5+, CD23-, CYCLIN D1+). It is a typical CD20+ B cell lymphoma with the poorest survival among all NHLs. Around 6 to 8 % of total lymphomas are composed of mantle cell lymphoma. It occurs at the age of 65 years and affects mostly men. Mantle cell lymphoma usually involves neck nodes but can also involve the abdomen, axilla, chest, pelvis, and other regions. It may be confined to a single region or present in various body areas. Though lymphoma is found diffusely in lymphoid tissue, it may also be found in the GI tract, breast, and skin. The symptoms and physical examination findings may vary from case to case. MCL has an average survival rate of 3 years and is aggressive but responds to chemotherapy[1]. Skin involvement is mostly seen only in stage IV disease[2]. This case proves the importance of clinical examination of generalized lymph nodes. Even though the inguinal hernia is a clinical finding, conducting a thorough clinical examination of lymph nodes is mandatory. In case of any doubt, we can plan for radiological investigations. The study aims to do a proper routine physical general examination for all inguinoscrotal swellings, alerting us in case of lymphadenopathy and changing the management plan. It also aims in the management plan for lymphoma, which was presented as an irreducible inguinal hernia, and if it complicates bowel adhesions. MCL accounts for 2.5% of non-Hodgkin lymphomas. It is a very aggressive lymphoma that has a poor prognosis. Lymphomas presenting as inguinal hernias are very rare. Generally, lymphomas metastasize from the GI tract, prostate, and ovarian malignancies. Even though extra-intestinal non-hodgkin's lymphoma is the commonest variety of extranodal lymphoma, other possible lymphomas are also present in the extranodal site. There are also cases with primary small intestinal non-Hodgkin's lymphoma diagnosed after emergency surgery[3]. Given that it could be the initial manifestation of an asymptomatic metastatic lymphoma, this case highlights the importance of routine microscopic investigation of hernia sacs discovered from inguinal/femoral herniorrhaphies. The aim & Objective of this research is to get a definitive diagnosis before surgery to prevent a change in treatment. Obtaining appropriate immunohistochemistry results and directing them through the appropriate route for these situations completes the surgical treatment even after proper surgical care. In this case, we suspected lymphoma because there are multiple lymphadenopathies in the inguinal and abdominal regions. But the only thing is whether it is associated with obstructed inguinal hernia, and proper clinical examination made us think the node presented as an irreducible inguinal hernia. After obtaining informed consent from the patient to use his data, this case report was followed.

2. CASE REPORT

2.1. History of presenting illness

A 72-year-old male complained of swelling over the right groin for the past 5 years associated with pain for the past 3 months. The patient gives a history of reducibility of the swelling initially on lying down, but the swelling has been irreducible for the past 3 months.

2.2. Past History

No H/O previous surgeries
The patient has no co-morbidities.

2.3. Personal history

The patient is a known case of a chronic smoker.

2.4. Family history

nil significant

2.5. Examination

2.6. On general examination

Pulse rate – 84/min, blood pressure- 130/84 mmHg, respiratory rate- 16/min. On examination 8x6 cm irreducible swelling extending 10cm from the anterior superior iliac spine reaching the root of the scrotum, firm in consistency, favoring a clinical diagnosis of right-sided irreducible inguinal hernia. Another swelling of size 10x8cm swelling present over the right side of the hemiscrotum, cystic in consistency, trans illumination positive with get above the swelling present suggestive of hydrocele [fig 1].

Fig 1: Pre-operative image showing inguinoscrotal swelling over the right side with penis pushed towards the left side

It demonstrates the pre-operative image showing inguinoscrotal swelling, which extends to the root of the scrotum without scrotal rugosity, and the circumcised penis, which was pushed to the opposite side. Both the testis was palpable, and cough impulse was absent as the swelling was irreducible. The patient also has multiple inguinal, cervical, and axillary lymph nodes which were firm, mobile, non-tender, and not matted.

3. INVESTIGATIONS

WBC count was found to be 9000/microliter. Ultrasound abdomen showed spermatic cord lesion with hydrocele and multiple Bilateral inguinal lymphadenopathies. Fine needle aspiration cytology of the inguinal lymph node showed a polymorphous population of predominantly small lymphocytes, centroblasts, centrocytes, and immunoblasts in a lymph glandular background; no malignant cells were seen; however, suggested biopsy for definitive diagnosis. A urology opinion obtained advised Contrast-enhanced computed tomography abdomen and tumor markers. Tumor markers were negative. Subsequent contrast Computed tomography abdomen and pelvis shows multiple moderately enlarged non-caseating lymph nodes in the right common iliac and external iliac stations[fig.5]. Multiple mild to moderately enlarged right and left para-aortic, pre-aortic, aortocaval, retrocaval lymph nodes, and bilateral inguinal regions—multiple mildly enlarged right sub-diaphragmatic, retrocrural nodes with differential granulomatous lymphadenitis and lymphoma diagnosis. CT of the chest and neck showed Peribronchial interstitial thickening with multiple centrilobular nodules in both upper lobes and in the superior segments of both lower lobes, Areas of nodular consolidation in apicoposterior segments of both upper lobes, Focal fibrotic strands with calcification in the posterior segment of right upper lobe, Multiple moderately enlarged non-caseating right paratracheal, pretracheal, precarinal, retrocarinal and bilateral axillary lymph nodes and multiple enlarged cervical lymph nodes with differential diagnosis of granulomatous lymphadenitis and lymphoma.

4. CLINICAL DIAGNOSIS

Tuberculous lymphadenitis
Lymphoma

4.1. Procedure/treatment

The patient was planned for inguinal exploration and proceeded with cervical node biopsy under spinal anesthesia after obtaining fitness for surgery. The inguinal incision was made, and layers deepened. Findings were a mass of 8x6 cm protruding through the deep ring but separate from the cord structures firm to hard in consistency, a Hydrocele sac of size 10x8 cm present cystic in consistency, Indirect sac with no contents was noted; spermatic cord thickening was present [fig 2].

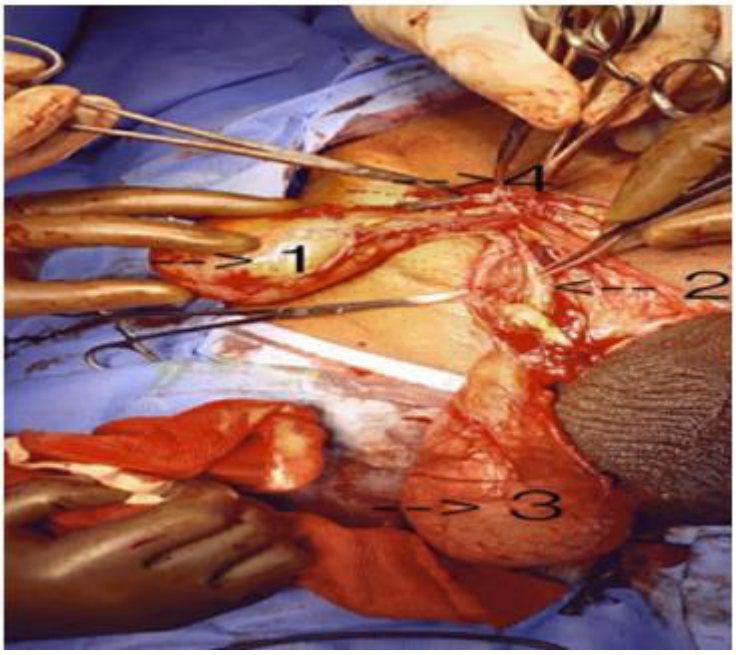

Fig 2: 1- Mass protruding from the deep inguinal ring but is separated from the spermatic cord structures – lymph node mass protruding through the deep ring.
2- spermatic cord structures where vas deferens, pampiniform plexus of veins, and others are seen.
3- Hydrocele sac, where the sac was thickened, continues along with the cord structures, and the testis was palpable within the Hydrocele sac.
4- showing a separate indirect sac at the level of the deep ring.

High inguinal orchiectomy uses 2-0 vicryl, and the specimen is sent for biopsy [fig3]. Multiple inguinal lymph nodes were dissected and removed. Herniorrhaphy done using 1 prolene, hemostasis was achieved, and layers closed. Right-sided transverse incision made over the neck midline to sternocleidomastoid, fascia opened, lymph nodes dissection was made and multiple nodes were delivered, hemostasis achieved, layers closed, and specimen sent for biopsy. Post op period could have been more uneventful. Biopsy showed lymph nodes with complete effacement of architecture by small mature-looking lymphocytes with focal extracapsular extension suggestive of non-hodgkin's lymphoma [fig4]. Immunostaining was positive for BCL-2, CD20, and CD5, weakly positive for CD3, and CYCLIN D1, and negative for BCL-6, CD10, and CD23, with overall features consistent with mantle cell lymphoma.

4.2. Follow up

The patient was referred to the hemato oncology department for further management. Oncologist suggested chemo and radiotherapy. The patient is under regular follow-up.

5. RESULTS

Compared to other carcinomas, colonic carcinoma is the one that manifests most frequently in inguinal hernias. Surgery is usually only necessary for problems such as perforation or obstruction. Patients get R CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) or RB (rituximab and bendamustine) chemo-immunotherapy, with the latter being more well-tolerated and linked to longer progression-free survival. However, interestingly, there are instances of lymphoma that show as a cecal mass. Cecal masses frequently share a differential diagnosis with TB and carcinoma cecum. Cyclin D1 overexpression is the initial occurrence in mantle cell lymphoma. The most common symptom of primary spermatic lymphomas is a tumor in the groin or upper area of the scrotum, whereas the primary malignant spermatic cord.

Fig 3- 1 – shows thickened hydrocele sac, which was delivered along with the cord structures after ligating the cord structures at the level of the deep ring – high inguinal orchiectomy was done
2- Shows the node which was presenting as the irreducible inguinal mass, which was hard in consistency, and this node was separately seen from cord structures

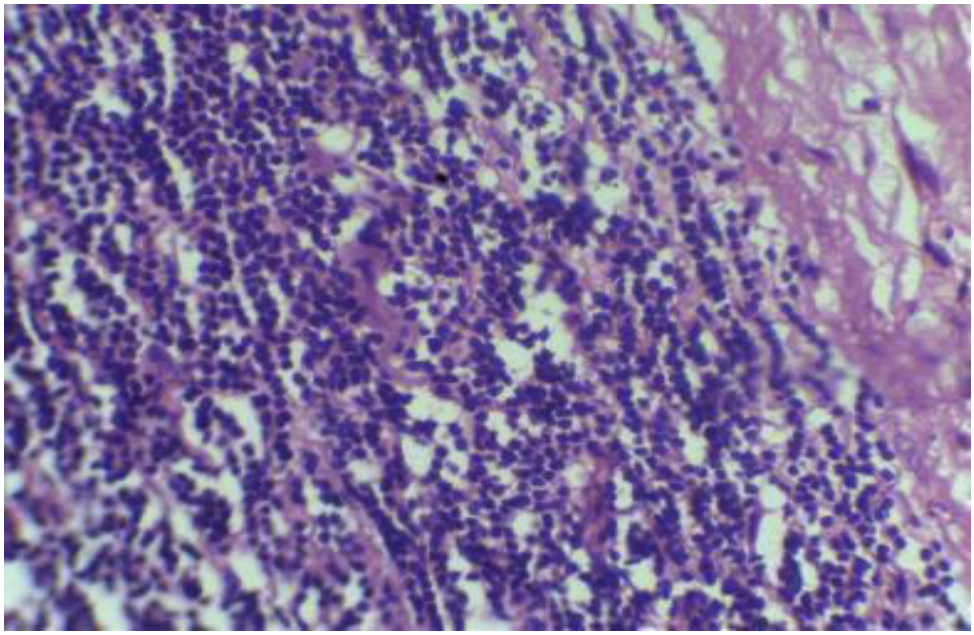

Fig 4: H&E X 100 on high power shows the effacement of architecture in the lymph node. A biopsy of another 5 inguinal lymph nodes was taken, which showed the same features.

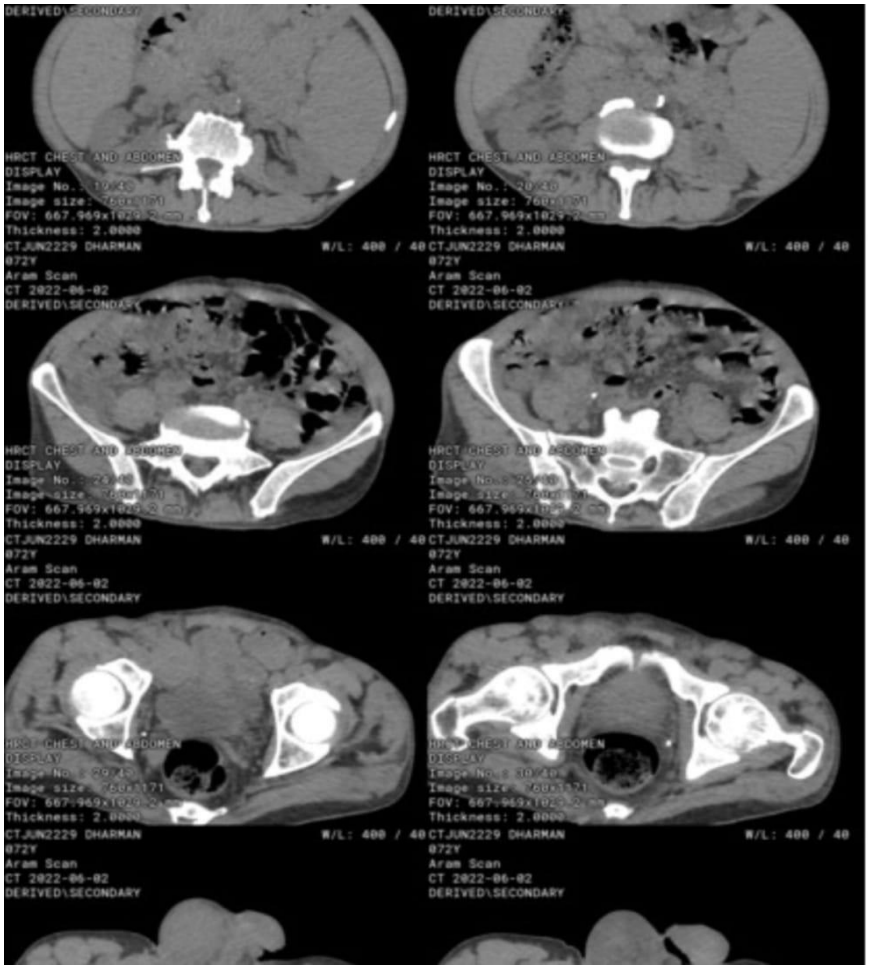

Fig 5. Ct's abdomen showed multiple moderately enlarged non-caseating lymph nodes in the right common and external iliac stations. Multiple mild to moderately enlarged right and left para-aortic, pre-aortic, aortocaval, retrocaval lymph nodes, and bilateral inguinal regions. Multiple mildly enlarged right sub-diaphragmatic intraocular nodes

6. DISCUSSION

Among 23,000 hernia repairs, 0.08% have metastatic tumors, among which colon carcinoma is the most common. In the United States, more than 700,000 inguinal hernia repairs are made each year, according to the National Center for Health Statistics[19]. The most common clinical presentation was groin swelling or pain[4]. Less than 0.5% of overall hernia sacs have primary or metastatic carcinomas[5]. Routine histological evaluation of hernia sacs should be done to avoid an occult malignancy [6]. Many spermatic cord lymphomas were initially misdiagnosed as inguinal hernias[7]. Many other case reports were previously reported on the incidental finding of lymphomas inside the hernia sac during hernia repair but this case is a rare entity that it clinically presents as an irreducible inguinal hernia with initial reducibility present. Hence it implies the significance of routine clinical examination of lymph nodes and also routine histological evaluation of hernia sacs. Previously a similar case of diffuse large B-cell lymphoma was presented as an inguinal hernia. This case report finds differences between inguinal swellings and testicular tumors[8]. Many of the cases of lymphomas presenting as surgical emergencies were noted, and successful surgeries were done[9]. Many irreducible inguinoscrotal hernias containing perforated bowel loops and an incidental finding of schwannoma were found during inguinal surgeries [9-12]. Colonic carcinoma is the one that is present most frequently in inguinal hernia rather than other carcinomas [13,14]. Surgery is usually indicated only if complications like perforation or obstruction are present[15]. They are treated with chemo-immunotherapy of R CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) or RB (rituximab and bendamustine), with the RB being better tolerated and associated with longer progression-free survival[16]. In many cases, cecal mass shares a differential diagnosis of tuberculosis and carcinoma cecum, but surprisingly there are also cases of lymphoma present as cecal mass[17]. The first event in mantle cell lymphoma is cyclin D1 overexpression[18]. Primary spermatic lymphomas typically manifest as a tumor in the groin or upper region of the scrotum, while primary malignant spermatic cord tumors frequently show as inguinoscrotal hernias[20]. The most typical symptoms of colonic lymphoma are stomach pain and weight loss, and on physical examination, a palpable abdominal mass is found in 50% of patients. The ileocaecal area and caecum are by far the most often problematic areas. The most typical symptoms of colonic lymphoma are stomach pain and weight loss, and on physical examination, a palpable abdominal mass is found in 50% of patients. The ileocaecal area and caecum are by far the most often involved areas[21]. In dubious circumstances, immunohistochemistry may be needed for subclassification. The appropriate course of treatment is a combined modality of approach that incorporates both systemic chemotherapy and surgical debulking. It is the first case reported in the literature of irreducible inguinal hernia as a manifestation of mantle cell lymphoma. It highlights the importance of considering a malignant cause in the differential diagnosis of an irreducible hernia. Early diagnosis and treatment are essential for the best possible prognosis.

Surgery alone can be considered an adequate treatment for low-grade NHL disease that has not infiltrated beyond the submucosa[22]. Surgery should be considered even in elderly patients with comorbidities, as it can be the only cure for the disease. Early diagnosis and treatment can lead to better outcomes and improved quality of life for the patient. Close follow-up and multidisciplinary care are essential for successful management.

7. CONCLUSION

Lymphomas presenting as inguinal hernias are not that common, and mantle cell lymphoma is one of the rarest varieties of non-Hodgkin's lymphoma. Hence this is the first case of mantle cell lymphoma presenting as an irreducible inguinal hernia. When the diagnosis of the contents of an inguinal hernia is not well established, surgery is the only option and it should be planned as soon as possible to ensure the proper management of the disease with a multimodal team approach.

8. AUTHORS CONTRIBUTION STATEMENT

Dr.Barathiraja, Dr.Jayasurya M, and Dr.Karthikeyan conducted an initial physical examination of the patient. Dr.Barathiraja, Dr.Jayasurya M, Dr.Sasi Kumar, and Dr.Karthikeyan encouraged to investigate and supervise the findings of this work. Dr.Barathiraja, Dr.Jayasurya M, and Dr.Karthikeyan performed pre-operative work. Dr.Barathiraja, Dr.Jayasurya M,Dr.Sasi Kumar and Dr.Karthikeyan scrubbed for the case, and surgery was done. Dr.Barathiraja, Dr.Jayasurya M, Dr.Sasi Kumar, and Dr.Karthikeyan planned and analyzed the results in the following study. Dr.Thanka J analyzed the histopathological findings for this case. Dr.Barathiraja , Dr.Jayasurya M,Dr.Sasi Kumar and Dr.Karthikeyan did follow up on this case.

9. CONFLICT OF INTEREST

Conflict of interest declared none.

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