



ISSN: 0975-833X

## RESEARCH ARTICLE

### VASCULAR TRANSFORMATION OF SINUSES IN A FEMORAL LYMPHNODE FOLLOWING VARICOSE VEINS

\*<sup>1</sup>Dr. Arthy, O. S., <sup>1</sup>Dr. Manohar, U., <sup>1</sup>Dr. P. Viswanathan, <sup>1</sup>Dr. Rehana Tippoo and <sup>2</sup>Dr. R. Ramesh

<sup>1</sup>Department of Pathology, Rajah Muthiah Medical College, Annamalai University

<sup>2</sup>Department of General Surgery, Rajah Muthiah Medical College, Annamalai University

#### ARTICLE INFO

##### Article History:

Received 11<sup>th</sup> August, 2016

Received in revised form

20<sup>th</sup> September, 2016

Accepted 24<sup>th</sup> October, 2016

Published online 30<sup>th</sup> November, 2016

##### Key words:

Lymph node sinus,

Vascular transformation,

Femoral node, Varicose veins.

Copyright©2016, Dr. Arthy et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Arthy, O. S., Dr. Manohar, U., Dr. P. Viswanathan, Dr. Rehana Tippoo and Dr. R. Ramesh, 2016. "Vascular transformation of sinuses in a femoral lymphnode following Varicose Veins", *International Journal of Current Research*, 8, (11), 42432-42434.

#### ABSTRACT

Vascular transformation of sinuses is characterized by a conversion of lymph node sinuses into a complex network of anastomosing endothelial-lined channels. It is an incidental finding in lymph nodes excised during tumor surgery. Vascular transformation of sinuses is an unusual vaso proliferative lesion that is most often found in intra-abdominal lymph nodes removed in lymphoma staging procedures and in axillary lymph nodes removed after radical mastectomy<sup>3</sup>. A patient with vascular transformation of sinuses involving the femoral node following varicose vein is been reported.

#### INTRODUCTION

Vascular transformation of sinuses or nodal angiomatosis was first described by Haferkamp *et al* in 1971 (Juan Rosai, 2011; Harry, 2002; Weidner Cote Suster Weiss, 2003 and Haferkamp, 1971). Although lymphovascular obstruction has a major pathogenetic role in most cases of VTS, angiogenic factors produced locally by activated lymphoid cells can also allegedly produce VTS even in the absence of lymphovascular obstruction. The vascular proliferation is usually confined to subcapsular sinuses but may also other sinuses. The lesion consists of endothelium-lined blood-filled spaces associated with varying degrees of fibrosis<sup>3</sup>. It is an uncommon condition in which the vasoproliferative process is restricted to the lymph node sinuses and does not involve the parenchyma, capsule, or perinodalfibro adipose tissues. Lymphatic or venous obstructions, sometimes at more distal sites caused by a variety of conditions - tumors, congestive heart failure, thrombosis of major vessels, surgical procedures and radiotherapy- were identified in other reports (Chan, 1991 and Weidner Cote Suster Weiss, 2003).

#### Case report

A 33 year old male, labourer by occupation presented with dilated tortuous veins of back of the legs with ulcer (1x1 cm)

\*Corresponding author: Dr. Arthy, O. S.

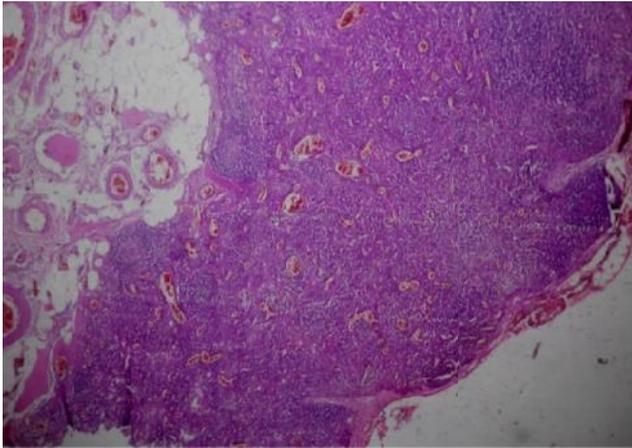
Department of Pathology, Rajah Muthiah Medical College, Annamalai University

with watery discharge for the past 6 months. Edema was present in the right leg and was absent in left leg. Peripheral pulses were present on both the legs. Patient was not a diabetic or hypertensive. Patient was not a known alcoholic or smoker. Left Trendelenberg procedure with perforator avulsion was done and during the surgery, an enlarged femoral node was found and subjected to histological examination. Gross examination revealed a single gray brown soft tissue piece measuring 3.5 x 1 x 1cm. On cut section, gray brown areas identified. A strip of vein was also received. Microscopic examination from the lymph node showed altered architecture. Cortex and medulla were observed, where there are numerous dilated vascular channels, predominantly more concentrated on sinusoids. There is extravasation of RBCs noted. Some of the vessels show thickened walls. Microscopic examination of the vein revealed enormously thickened blood vessel. The histological pattern was consistent with the diagnosis of vascular transformation of sinuses.

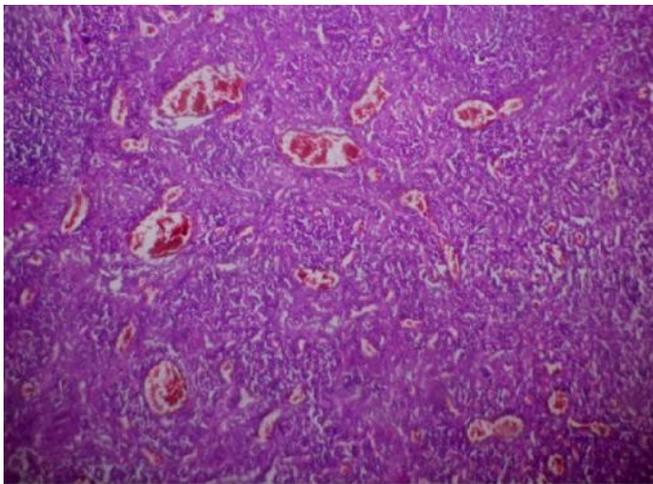
#### DISCUSSION

Vascular Transformation of Sinuses (VTS) is an incidental finding in lymph nodes excised during tumor surgery as in our case it was found incidentally during surgery for varicose veins. Occasionally such nodes are moderately enlarged and excision biopsies are obtained for histopathological examination. The age and sex of patients were about evenly distributed in a review of large series of cases. The lymph

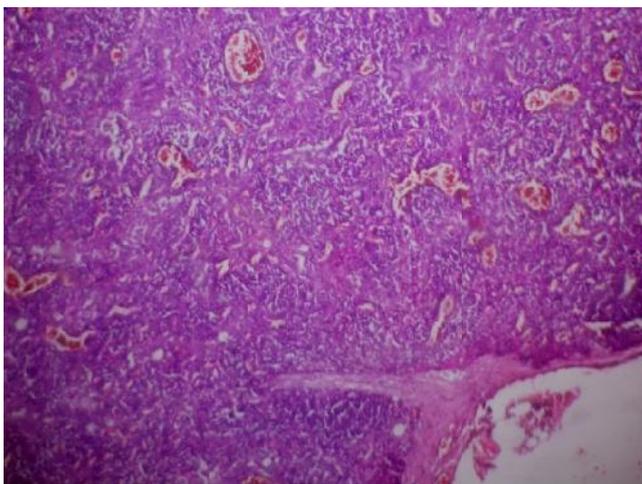
nodes at any location may be affected (Harry, 2002). Intra abdominal lymph nodes are the commonest to be affected by VTS; cervical being relatively rare (Prithwijith Ghosh, 2015).



**Figure 1. Vascular transformation of sinuses: numerous dilated vascular channels. Capsule not involved. H & E, 10X**



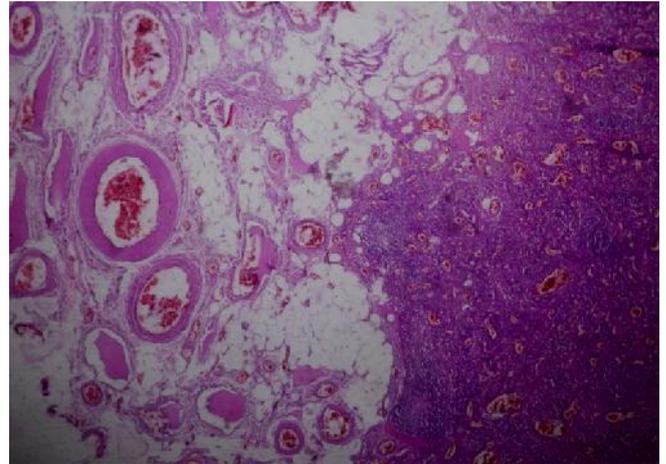
**Figure 2. Vascular transformation of sinuses: extravasation of RBCs noted. H & E, 40 X**



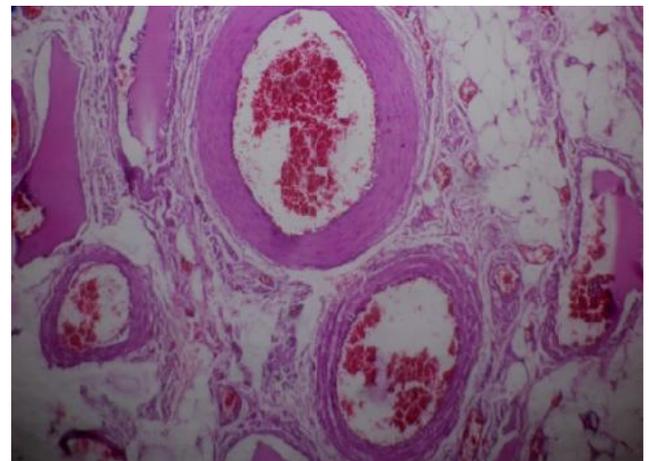
**Figure 3. Vascular transformation of sinuses: extravasation of RBCs noted. H & E, 40 X**

This lesion occurs frequently in congestive status such as in mediastinal lymph nodes in acute venocaval obstruction due to bronchogenic carcinoma or in axillary lymph nodes in radically mastectomized women. There has been one report of

the lesion in the retroperitoneal and the para pancreatic lymph nodes in an autopsy case of liver cirrhosis (Hiroshi Yokozaki and Eichii Tahara, 1988).



**Figure 4. Vascular transformation of sinuses: thickened and dilated blood vessels filled with RBCs. H & E, 10X**



**Figure 5. Vascular transformation of sinuses: thickened and dilated blood vessels filled with RBCs. H & E, 40X**

Although vascular transformation of sinuses is not a true tumor, it may be confused with cancerous tumors or metastases. VTS is considered to occur secondary to obstruction of the lymph node venous or efferent vessels. In a 40 year old woman VTS of the bilateral cervical region was reported in association with POEMS syndrome (polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy and skin changes), suggesting a potentially severe outflow problem in the lymph circulation (Xiaoqing Wang, 2015).

One unique case of VTS in bilateral cervical lymph nodes along with angiolipomatous hamartoma in a postoperative patient of squamous cell carcinoma of buccal mucosa clinically masquerading as tumor recurrence has also been reported (Prithwijith Ghosh *et al.*, 2015). Microscopically, the subcapsular, intermediate and medullary sinuses are distended and filled with proliferating blood vessels that form an anastomosing network of small vascular channels lined by hyperplastic endothelial cells. The expanding sinuses compress and diminish the parenchyma markedly altering the lymph node architecture. An important feature is the lack of capsular involvement.

Four histological patterns are described.

- Cleft like spaces lined by flat endothelial cells
- Rounded vascular spaces engorged with blood and lined by plump endothelial cells
- Solid pattern composed of spindle and plump cells;
- Plexiform pattern with intercommunicating vascular channels.

There will not be nuclear atypia or mitoses present. The lining cells of the capillary like architecture has been confirmed as endothelia because they showed immune reactivity for FVIII and UEA-I lectin binding affinity. All are associated with varying numbers of extravasated RBCs, deposits of hemosiderin, partial thrombosis and fibrosis. The differential diagnosis are Kaposi's sarcoma (random distribution and capsular involvement, PAS positive hyaline globules), Bacillary angiomatosis (lack fibrosis), Hemangioma and Hemangioendothelioma (well circumscribed nodules of aggregates of vessels of various types replacing parenchyma) and Angiosarcoma (invasive, nuclear atypia, frequent mitoses).

### Conclusion

Although Vascular transformation of sinuses is a benign lesion, it is important that it has to be differentiated from malignant vascular tumors of lymph nodes such as Kaposi's sarcoma and angiosarcoma.

### REFERENCES

- Chan JK and Warnke RA, *et al.* 1991. Vascular transformation of sinuses in lymph nodes. A study of its morphological spectrum and distinction from Kaposi's sarcoma. *Am J Surg Pathol.*, 15:732-743.
- Haferkamp, O., Rosenau, W. and Lennert, K: Vascular transformation of lymphnode sinuses due to venous obstruction. *Arch.Pathol.*, 1971,92:81-83
- Harry L. Joachim and Howard Ratech: Joachim's Lymph node Pathology, 1<sup>st</sup> Edition, Lippincot Williams & Wilkins, 2002, P 274 -276
- Hiroshi Yokozaki and Eichii Tahara, 1988. Vascular transformation of Lymph node sinuses in a patient with Liver cirrhosis. A case report. *Hiroshima J.Med.Sci.*, 37(2): 89 -92
- Juan Rosai: Rosai and Ackerman's Surgical Pathology volume1. In Rosai and Ackerman (eds): Surgical Pathology, 10th Edition, Elsevier, 2011, P 617-631.
- Prithwijith Ghosh *et al.* 2015. Vascular Transformation of Bilateral Cervical Lymph Node Sinuses: A Rare Entity Masquerading as Tumor Recurrence. *J Maxillofac Oral Surg.*, 14 (Suppl 1): 397-400.
- Weidner Cote Suster Weiss: Modern Surgical Pathology Volume1. In Noel Weidner *et al* (eds): Surgical Pathology, 2<sup>nd</sup> Edition, Saunders Elsevier, 2003, P1484- 1485
- Xiaoqing Wang *et al.* POEMS syndrome with vascular transformation of the lymph node sinuses: A case report. *Oncology letters. Spandidos publications*, 2015 Sep, 10(3): 1789-1792.

\*\*\*\*\*