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TRIPLE NEOPLASM IN AUTOPSY EXAMINATION; A CASE REPORT

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ABSTRACT

An increasing number of patients with multiple primary cancers are encountered due to improved cancer detection, widespread cancer screening and better cancer treatment. Here, we report such a patient without a family history of malignancies or a known genetic predisposition developing triple neoplasm of the cervix, liver and kidney. We present an autopsy case of a 72 years old female with history of cervical carcinoma. Heart, pieces of two lungs, piece of liver, two kidneys and brain with meninges were received in autopsy. We have reported a rare case of triple neoplasm, metastatic carcinoma involving lungs, liver and kidneys. Hemangioma in liver and Reno medullary interstitial cell tumor in kidney. To the best knowledge, presence of triple neoplasm is very rare incident. The etiology remains controversial and a lot of cancer patients have to be followed for long periods to obtain adequate data about the development of subsequent malignancies.

Key words: Triple neoplasm, Renomedullary interstitial cell tumor, metastatic lung adenocarcinoma, liver hemangioma, metastasis, autopsy examination.

INTRODUCTION

The association of two neoplasm in the same patient is unusual but has been widely described in literature, while triple neoplasm in the same patient is exceptional. Only very rare cases have been described in literature. The occurrence of multiple primary tumors, either synchronous or metachronous, poses significant challenges in the management of such patients. The prevalence of multiple primary tumors is estimated between 0.7% and 11.7%, and the occurrence is higher with increasing age. Patients with a history of malignancy are at a 14% higher risk of developing a second primary malignancy compared with the general population[1]. Furthermore, females have been shown to have a higher risk than males in developing multiple primary tumors. However, the development of more than two primary unrelated malignancies is still considered a rare phenomenon, especially in the absence of a family history or specific genetic predisposition.

MATERIAL AND METHOD

We have received viscera consisting of heart, pieces of two lungs, piece of liver, two kidneys and brain with meninges, after gross examination, sections were given from representative areas. Paraffin sections were processed in tissue processor and slides were stained with haematoxyline and eosin.

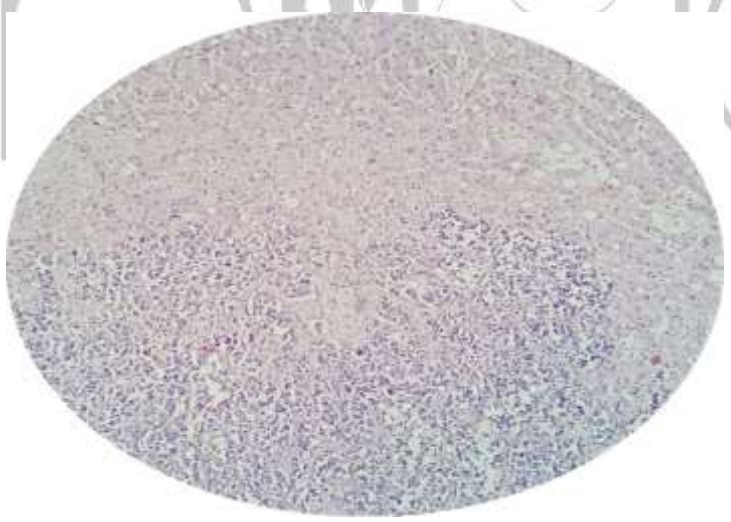

Fig 1: H & E stain 10X view showing Metastatic adenocarcinoma – Liver

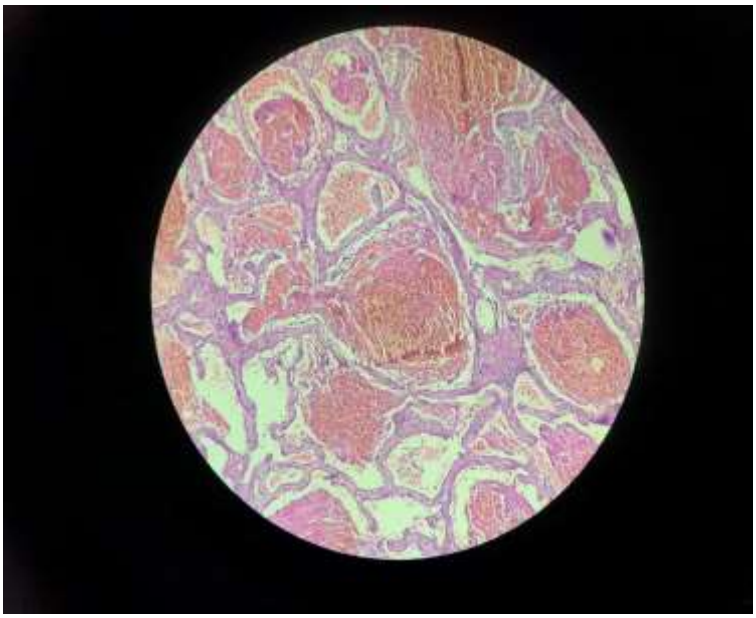

Fig 2: H & E stain 40X view showing Hemangioma – Liver

CASE PRESENTATION

We present an autopsy case of a 72 years old female with history of cervical carcinoma.

On gross examination, weight of liver was 420 grams and it measured 15x11x6 cm3 in size. External surface showed whitish nodules of varying size. Microscopically, the section from liver showed malignant epithelial cells arranged in cribriform, organoid and adenoid pattern. Cells are showing moderate anisonucleosis with hyperchromatic nuclei, coarsely clumped to salt and pepper chromatin and moderate amount of cytoplasm. Tumor giant cells are seen. On microscopy the sections from liver showed features of metastatic adenocarcinoma (Fig 1). Section from liver also showed features of Hemangioma (Fig 2).

On gross examination, one lung weighed 157 grams and measured 18.5x11x2 cm3 in size. Second lung weighed 144 grams and measured 12.5x10x3 cm3 in size. On cut surface, multiple whitish nodules of varying size, cannon ball appearance were seen. Microscopically, the sections from lung showed features of metastatic adenocarcinoma (Fig 3).

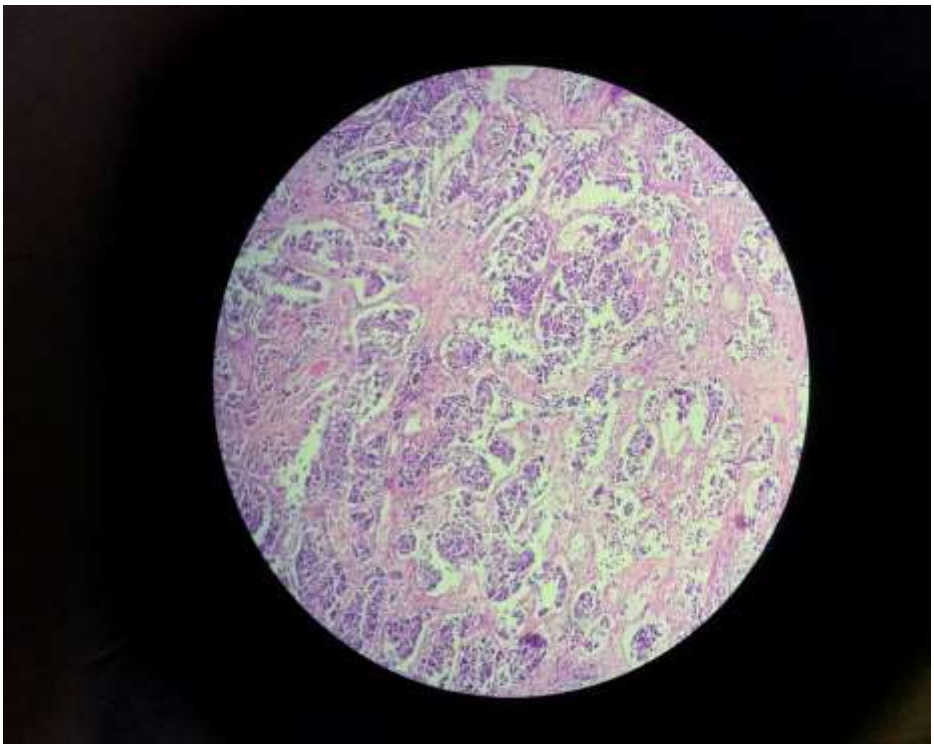

Fig 3: H & E stain 10X view showing Metastatic adenocarcinoma – Lung

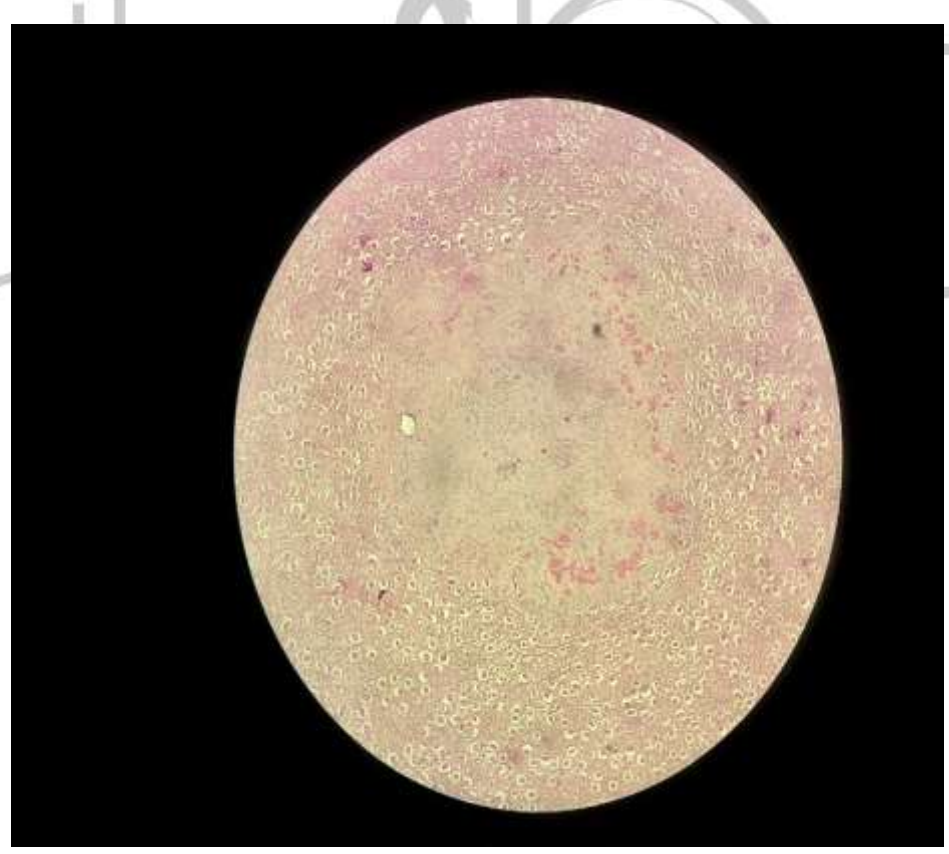

Fig 4: H & E stain 10X view showing Renomedullary interstitial cell tumor

On gross examination, one kidney weighed 86 grams and measured 8.5x6x2 cm3 in size. Second kidney weighed 75 grams and measured 8x5x1.5 cm3 in size. Both kidneys were greyish white in color with irregular surface and small kidney showed small whitish nodules. Microscopically, the sections from kidney showed features of metastatic adenocarcinoma. Sections from kidney also showed Renomedullary interstitial cell tumour (Fig 4).

DISCUSSION

The exact etiology of multiple neoplasm is ill-defined; various factors include a genetic predisposition, environmental factors, gender, hormonal factors, previous medical treatment, and interactions of these factors. As per the Warren and Gates criteria, the probability of one being the metastasis of the other must be excluded before starting curative treatment of the new tumor [1]. Incidental detection of neoplasia is very rare in autopsy examination. In study of S. Patel incidental malignancy was 2.47%[2]. Whereas incidental autopsy finding in study by Burton EC who detected malignancy in 9% of cases [3]. Theodor Bilroth was the first to report multiple primary malignancies in a single patient in 1879. To qualify to be multiple primaries, he thought that tumour should have a distinct histology, arise from a different organ, and should have the ability to produce its own metastasis. These criteria were modified later and included the term that "possibility of one being a metastasis of another must be excluded". Renomedullary interstitial cell tumour (RMICT) were first described in 1972. They are common incidental findings at autopsy with frequencies between 16% to 41.8% [4]. Most of the RMICTs are clinically silent for a lifetime. They are incidentally found in nephrectomies performed for other tumors or at autopsy. This lesion is usually small and thus escapes clinical detection. Renomedullary interstitial cell tumor (RMICT), previously known as medullary fibroma, is a rare benign tumor of kidney that localizes in the medulla [5]. Most of the cases are asymptomatic. However, hematuria and urosepsis have been reported. Rare association has been found with hypertension and hydronephrosis. These lesions are rare in the first two decades of life and tend to increase with age they appear most commonly in patients older than 50 years [4]. We report a case of RMICT which was incidentally detected at autopsy. The renomedullary interstitial cells [RMIC] are located in the inner medulla. These cells express receptors for multiple vasoactive peptides. RMIC plays important role in rennin release and regulation of sodium excretion, thereby maintaining renal blood flow and normal blood pressure. RMICTs are unencapsulated, round to oval, well circumscribed, soft, tan to white, homogeneous, usually solitary, sometimes multiple and bilateral. Their size varies from 1mm to 1 cm. However, an 8 cm lesion is also reported in the literature [4]. Microscopically RMICTs are variably cellular tumors usually with an abundant spindle to stellate cells embedded in loose and myxoid or densely collagenized stroma. Some tumors are hyalinised and others contain deposits of amyloid. The entrapped normal tubules are frequently seen, particularly at periphery of the tumor and may rarely show cystic dilation. Immunohistochemistry of stromal cells in RMICT shows features resembling

myofibroblasts such as positivity for smooth muscle actin, COX-2 and PGE2 [4]. In the differential diagnosis this tumor should be distinguished from the metanephric stromal tumor. It is rarely found in adults and has the characteristic formation of concentric "onionskin" rings or collarettes of stromal cells around entrapped renal tubules and blood vessels in a myxoid background [6]. Another differential diagnosis is Mixed epithelial and stromal tumor (MEST), a larger mass lesion. Hepatic hemangioma (HH) is a mesoderm-derived tumor consisting of a blood-filled space, fed by hepatic arterial circulation and lined by a single layer of flat endothelial cells[7]. It is the most common benign liver tumor, presenting as a well- circumscribed hypervascular lesion, more commonly found in women with a prevalence that ranges from 0.4% to 7.3% (based on autopsy findings) and an incidence of 0.4%-20% in the general population[8]. In most cases, it is found incidentally at laparotomy/autopsy[9]. Majority of this are asymptomatic, found incidentally during imaging investigation for unrelated pathologies. Typical hemangiomas, the so-called capillary hemangiomas, range from a few mm to 3 cm, do not increase in size over time and therefore are unlikely to generate future symptomatology. Small (mm-3 cm) and medium (3 cm-10 cm) hemangiomas are well-defined lesions, requiring no active treatment beside regular follow-ups. However, the so-called giant liver hemangiomas, of up to 10 cm (most commonly) and even 20+ cm in size (according to occasional reports) can, and usually will develop symptoms and complications that require prompt surgical intervention or other kind of therapy. Hepatic hemangioma (HH) are classified by their nature as cavernous, capillary and sclerosing hemangioma; the latter is characterized by degeneration and fibrous replacement and can be misdiagnosed as a malignant tumor [10]. On hematoxylin-eosin staining microscopy, HH appear as dilated vascular channels lined by a single layer of endothelial cells. Complications of HH include necrosis, thrombin, sclerosis or calcification. The differential diagnosis with hemagioma should be distinguished from hemagiomatosis, hereditary hemorrhagic telangiectasia, aberrant portal vessels, dilated vascular channels with in portal tracts.

Pulmonary metastasis occurs in a small number of patients with cervical cancer. The prevalence of pulmonary metastasis was 2.1%-6.1% [11]. Imachi et al. also report that the incidence of pulmonary metastasis and positivity in peritoneal cytology are higher in the adenocarcinoma group than in the SCC group [12].

Only one similar case was reported in the literature; it was a patient with four primary tumors. These cancers were cervical carcinoma and lung carcinoma, which occurred synchronously, and basal cell carcinoma of the skin and rectal carcinoma which occurred metachronous. A successful resection of two synchronous and two metachronous cancers was performed successfully [13].

CONCLUSION

We have reported a rare case of triple neoplasm, metastatic carcinoma involving lungs, liver and kidneys. Hemangioma in liver and renomedullary interstitial cell tumor in kidney. To the best knowledge, presence of triple neoplasm

is very rare incident. The etiology remains controversial and a lot of cancer patients have to be followed for long periods to obtain adequate data about the development of subsequent malignancies.

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CONFLICT OF INTEREST

Not applicable

REFERENCES

[1] **Umesh Jayarajah, Oshan Basnayake, Pradeep Wijerathne**, *et al*. A Rare Occurrence of Three Primary Malignancies of the Rectum, Breast, and Kidney in the Same Patient: A Case Report and Review of the Literature. **Hindawi journal - Case Reports in Surgery** Volume 2019, Article ID 1716029, 4 pages. 9 September 2019.

[2] **Sens MA, Zhoo XD, Weiland T, Cooley AM**. Unexpected neoplasm in autopsy identified. Implication for tissue and organ safety: Aed pch lab. Med 2009: 133: 1923-31.

[3] **Burton EC, Toxclair DA, Neuman WP**. Autopsy diagnosed a malignant neoplasm: how often clinical diagnosed incorrect? JAMA:1998: 280(14): p 1245-1248.

[4] **Dr. S.K Khurana, Dr. A.V Gosavi, Dr. N.A Ramteerthakar, Dr. K.R Sulhyan**. Renomedullary Interstitial Cell tumor ina young lady: An incidental autopsy finding: A case report. Renomedullary Interstitial Cell tumor ina young lady: An incidental autopsy finding: A case report

[5] **Agras K, Tuncel A, Aslan Y, Kulacoglu S, Atan A**. Adolescent renomedullary interstitial cell tumor:A case report. Tumori.2005; 91:555-557.

[6] **Victor E, Reuter and Satish K, Tickoo. Adult Renal Tumors. In: Mills SE** *et al,* editors. STERNBERG'S Diagnostic Surgical Pathology. 5 th edi. Vol 2, Philadelphia: Lippincott Williams & Wilkins; 2010; 1781-1782.

[7**] Bajenaru N*, Balaban V**, Săvulescu F*, Campeanu I***, Patrascu T***** Hepatic hemangioma-review. Journal of Medicine and Life Vol. 8, Special Issue, 2015, pp.4-11

[8] **Hasan HY, Hinshaw JL, Borman EJ, Gegios A, Leverson G, Winslow ER**. Assessing normal growth of hepatic hemangiomas during long-term follow-up. *JAMA Surg*. 2014;149:1266-1271.

[9] **Rosai and Ackerman's** Surgical Pathology. Authors: john goldblum, laura lamps, jesse mckenney, Jeffrey myers. Eleventh Edition. Elsevier 2017. p 957-958.

[10] European Association for the Study of the Liver (EASL). EASL Clinical Practice Guidelines on the management of benign liver tumours. J Hepatol. 2016;65:386-398.

[11] **Anderson TM, McMahon JJ, Nwogu CE, Pombo MW, Urschel JD, Driscoll DL**, *et al.* Pulmonary resection in metastatic uterine and cervical malignancies. Gynecol Oncol. 2001;83:472-6.

[12] **Imachi M, Tsukamoto N, Matsuyama T, Nakano H**. Pulmonary metastasis from carcinoma of the uterine cervix. Gynecol Oncol. 1989;33:189-92.

[13] **C. Baykal, Y. Baykal, C. Taskiran, I. Esinler, A. Demirol, R. Dogan, ˘ A. Ayhan,** An extraordinary case of four primary tumors in the same patient, involving the uterine cervix, lung, skin, and rectum, Eur. J. Gynaecol. Oncol. 23 (5) (2002) 451–452.