CASE REPORTS

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A Case Report on Madelung Disease in a 59-Year-Old Man

ABSTRACT

Objective: To present a case of a 59-year-old male with bilateral symmetrical lipomatosis consistent with Madelung disease.

Methods:

Design: Case Report
Setting: Tertiary Government Training Hospital
Patient: One

Results: A 59-year-old alcoholic man presented with progressive, bilaterally symmetrical masses in the supraclavicular and anterior neck regions over a 12-month period. Computed tomography revealed diffuse, non-enhancing, symmetrical subcutaneous fatty deposits without delineated solid or cystic masses. The masses were surgically excised, and histopathologic analysis confirmed lipoma. Post-operative recovery was unremarkable, with significant cosmetic improvement and no recurrence in the 2 years of regular follow-up.

Conclusion: This case highlights the pathognomonic clinical presentation of Madelung disease in a middle-aged Filipino man with a long history of alcohol consumption and no familial predisposition. Recognition of its characteristic features—symmetry, fat distribution, association with alcoholism, and radiologic profile—is essential to avoid misdiagnosis and unnecessary interventions. Lipectomy achieved excellent cosmetic and clinical outcomes in this patient, underlining its role as the primary treatment modality.

Keywords: *Madelung disease; multiple symmetrical lipomatosis; Launois-Bensaude Syndrome; lipoma; neck masses, alcoholism*

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Madelung disease, or multiple symmetrical lipomatosis, is an adipose tissue disorder characterized by diffuse, symmetric, non-encapsulated lipomatous deposits, most commonly involving the neck, upper back, shoulders, and upper arms, with relative sparing of the lower extremities.[1] Although histologically benign, these masses may cause significant cosmetic deformity and, in advanced cases, compressive symptoms affecting the upper aerodigestive tract or great vessels.[2,3] The global incidence is estimated at 1 in 25,000, with a marked male predominance (15:1 to 30:1)[1] and a strong association with chronic alcohol use; the condition is most prevalent in the Mediterranean but is uncommon in Asia, with only one documented case in the Philippines.[4]

We present the case of a 59-year-old Filipino man with a history of chronic alcohol consumption and bilateral supraclavicular and cervical lipomatosis, successfully treated with surgical excision, to highlight the importance of early recognition, appropriate imaging, histopathologic confirmation, and multidisciplinary management.

CASE REPORT

A 59-year-old man consulted with a chief complaint of an anterior neck mass. Twelve months earlier, he palpated 3 x 3 cm, non-tender, mobile, bilateral supraclavicular masses, accompanied by increased body mass. There were no other symptoms, and he did not seek consultation or take any medications. The masses progressed, enlarging medially, and another 3 x 3 cm, soft, painless, mobile mass was noted in the anterior neck after a month. Similar masses appeared in both axillae after three more months, with all masses persisting until he finally sought our help.

He was diagnosed as hypertensive for two years but not compliant with medications. There was no family history of cancer or neck masses. He was an alcoholic beverage drinker and consumed three or more shots of gin daily since his teens especially after work. The review of systems was unremarkable.

Physical examination revealed soft, non-tender, non-erythematous masses in both supraclavicular areas extending toward the midline over the suprasternal region. Additionally, there was a soft, non-tender, non-erythematous mass in the submental and submandibular areas extending to the level of the cricoid cartilage. *(Figure 1)*

Our first impression of Madelung disease was confirmed by contrast-enhanced computed tomography (CECT) scan findings of diffuse thickening of the subcutaneous layer, especially in the posterior cervical region, with significant intermuscular distance extending to

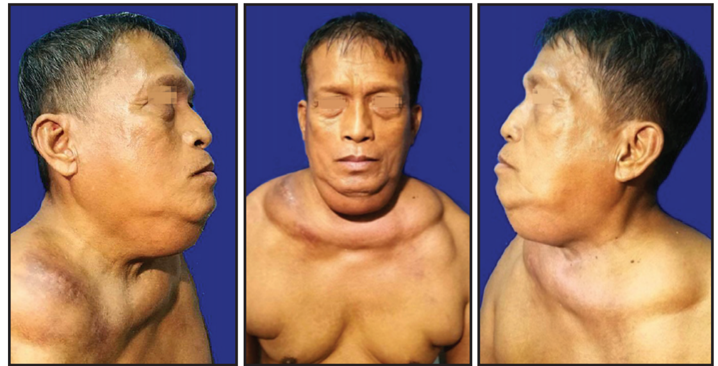

Figure 1. Pre-operative photos showing the typical masses in the supraclavicular, anterior neck, and axillary areas. Photos published with permission.

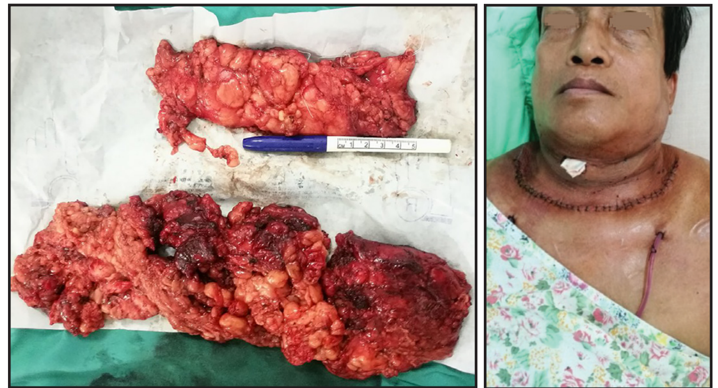

Figure 2. Gross surgical specimen consisting of light-yellow tissues with an aggregate measurement of 9.0 x 9.0 x 3.0cm. The smaller specimen is the mass from the submandibular area, and the larger specimen is the mass from the supraclavicular area, alongside the patient, one day post-operation. Photos published with permission.

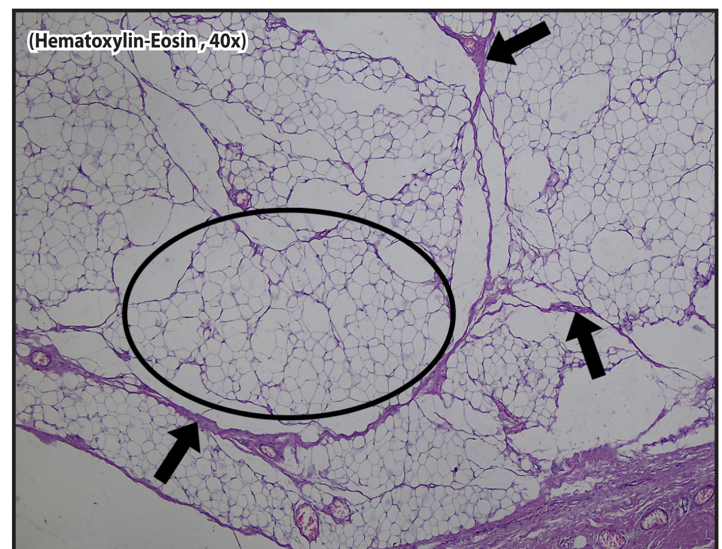

Figure 3A. Microscopic image of the specimen stained with Hematoxylin and Eosin at 40x magnification (scanner view) shows mature adipocytes arranged in lobules (black circle), separated by thin fibrous septa (black arrows).

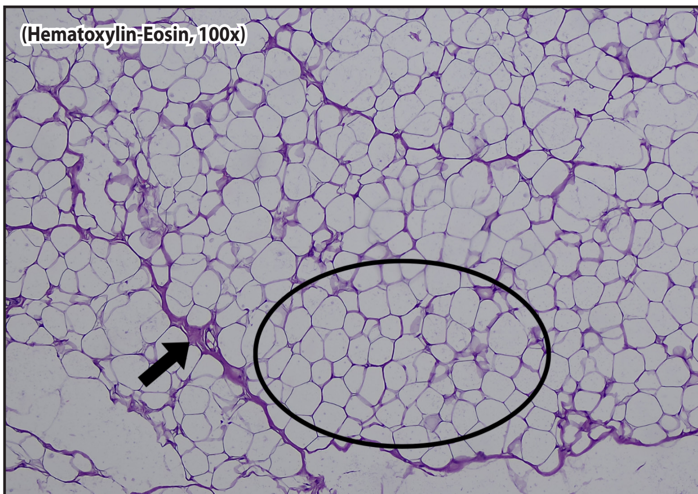

Figure 3B. Microscopic image of the specimen stained with Hematoxylin and Eosin at 100x magnification (low power view) shows tightly packed mature adipocytes with polyhedral shapes (black circle), separated by a thin fibrous septum (black arrow). The adipocytes have slight variations in size.

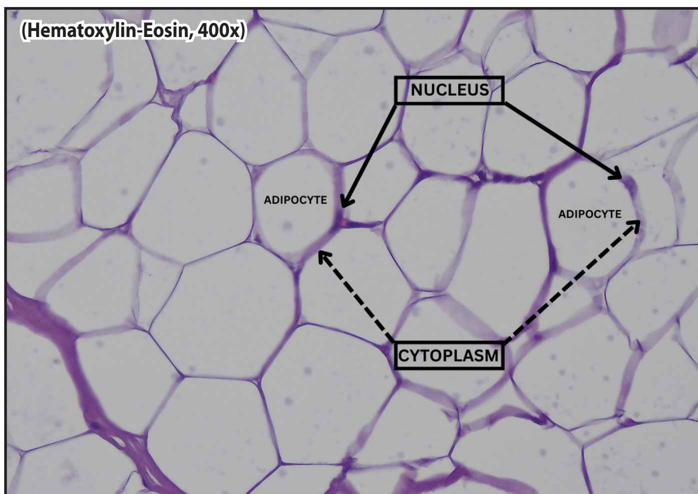

Figure 3C. Microscopic image of the specimen stained with Hematoxylin and Eosin at 400x magnification (high power view). Individual adipocytes are polyhedral in shape, with a large central vacuole and peripherally located small, bland, basophilic nuclei (solid arrows) and scant, lightly eosinophilic cytoplasm (dashed arrows), giving them an almost signet-ring-like appearance.

the supraclavicular, submandibular, and posterior chest wall areas. Aside from slightly elevated liver enzymes and left axis deviation with sinus bradycardia on electrocardiography, routine lab results were normal, and our patient was cleared for surgery.

We performed a lipectomy of bilateral supraclavicular and submandibular masses, which had a total combined weight of 820 grams. *(Figure 2)* The patient was discharged on the 8th day post-operation without any complications. The final histopathological examination confirmed the masses as lipomas. *(Figure 3)* The patient was referred to endocrinology, cardiology, and a dietitian for further care. There was no recurrence noted two years after surgery.

DISCUSSION

We report a case of Madelung disease, or multiple symmetric lipomatosis (MSL), in a middle-aged Filipino man whose presentation was highly suggestive of the condition. The bilateral, symmetric, painless, progressively enlarging, unencapsulated fatty masses in the neck and upper thorax, combined with a history of chronic alcohol use and no family history of similar disorders, were consistent with Type I MSL, a lipodystrophy characterized by progressive adipose tissue deposition in the cervicothoracic region.[5]

The etiology of MSL is still unclear. However, mitochondrial dysfunction, particularly involving brown adipose tissue (BAT), is the leading proposed mechanism. Histopathological and ultrastructural studies have shown hypertrophic adipocytes with disorganized mitochondria, supporting the theory that defective oxidative phosphorylation impairs lipolysis and favors excessive lipid accumulation.[1] These adipose deposits commonly occur in regions where BAT persists into adulthood, such as the supraclavicular fossa, cervical triangle, axillae, and thoracic wall—mirroring the distribution seen in our patient.[6]

Chronic alcohol consumption, which was present in our patient, is a major risk factor implicated in up to 90% of MSL cases.[7] Alcohol may exacerbate mitochondrial toxicity and disrupt adrenergic regulation of lipid metabolism, contributing to abnormal fat proliferation. It is also believed to influence the growth of pre-existing lipomas or alter hormonal pathways that would otherwise regulate fat distribution.[3]

Classification of MSL into Type I and Type II offers clinical utility. Type I, which our patient demonstrated, is characterized by symmetric fat accumulation primarily in the upper body—neck, shoulders, supraclavicular areas—resulting in a pseudo-athletic appearance. In contrast, Type II involves more generalized and often disfiguring fat deposition, resembling obesity, and includes the extremities and trunk.[5] This classification informs both functional assessment and treatment planning.

Diagnosis is primarily clinical, but imaging studies such as CT or MRI help confirm the distribution and non-encapsulated nature of the fat and exclude deep or infiltrative lesions. Computed tomography typically shows homogeneous fat attenuation with no internal septations, enhancement, or calcifications.[3,4] In our case, contrast-enhanced CT scans revealed these exact features, with no involvement of the airway or vascular structures. Additionally, CT and MRI accurately diagnose the disease and exclude other soft tissue tumors. Results from the contrast CT scan and histopathologic examination of the biopsy can rule out liposarcoma, confirming the case as Madelung disease.[3]

Management of Madelung disease focuses on surgical resection for symptomatic relief or cosmetic improvement. Weight reduction and abstinence from alcohol are widely advised but are ineffective at regressing established lipomatous deposits.[8] Surgical techniques may include lipectomy, liposuction, or a combination of both. Lipectomy is more suitable for large, deep, or functionally limiting masses and has lower recurrence rates compared to liposuction.[6] In our case, staged lipectomy was recommended because of multiple large lipomatous masses. Liposuction could be considered for areas where aesthetic outcome and reduced invasiveness were prioritized, but the predominant approach was lipectomy through transverse cervical incisions to allow optimal exposure and vascular control. As seen in our patient, open lipectomy was successful.

Because recurrence is not uncommon, particularly in patients who continue alcohol intake, multidisciplinary follow-up with surgical, cardiac, endocrine, dietary and rehabilitation services is recommended.[7] Patients also benefit from psychological support, especially when body image, disfigurement, or social stigma is a concern.[8] This patient-centered strategy is key to improving quality of life and long-term outcomes.

In conclusion, this case is a rare but pathognomonic presentation of Madelung disease in a Filipino man. Recognition of its characteristic features—symmetry, fat distribution, association with alcoholism, and radiologic profile—is essential to avoid misdiagnosis and unnecessary interventions. Treatment is still surgical, tailored to the severity of deformity and patient preference.

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