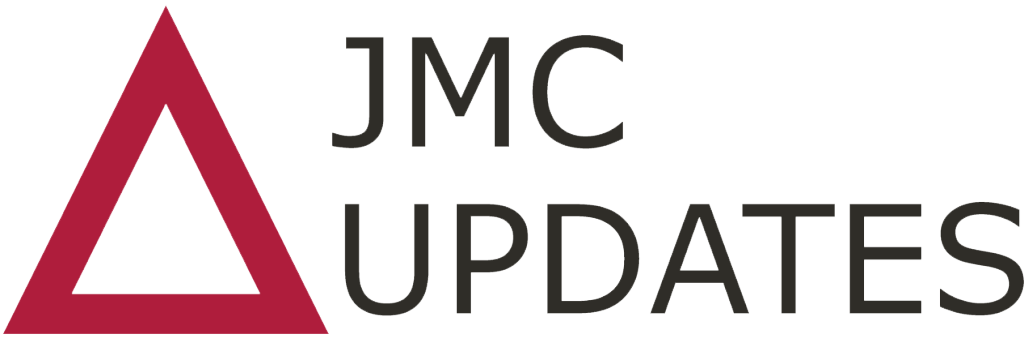

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Journal of Medical Cases Updates 2022;2(3):32-35

Report of A Rare Lung Neoplazm: Peripheral Intrapulmonary Lipoma

Özlem Kara[1], Ebru Akay [2], Mehmet Akif Tezcan[3], İbrahim Ethem Özsoy[3], Hatice Karaman[2],

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ABSTRACT

Lipomas are frequent benign neoplasms; but however, it is rare in visceral organs such as the lung and a limited number of cases have been reported. Most pulmonary lipomas occur in the endobronchial localization. Peripheral intrapulmonary lipomas consist of 16 cases described in the literature in the past 100 years, including this case. Our case was found incidentally during thoracotomy due to secondary spontaneous pneumothorax. Macroscopically, it was 1.2 cm in diameter, well circumscribed, thin capsules, and yellow mass in the cut surface. Microscopically, the tumoral lesion consisting of uniform mature adipocytes surrounded by a thin fibrovascular connective tissue capsule was found to be compatible with lung lipoma.

In our article, the clinical, macroscopic and microscopic features of a peripheral intrapulmonary lipoma case are discussed.

Keywords: Lung, Lipoma, Nodüle, Solitary Pulmonary

INTRODUCTION

Intrapulmonary lipomas can be divided into two categories : intrabronchial lipomas and peripheral pulmonary lipomas (1). The vast majority are located centrally within the lung, arising from proximal lobar or segmental bronchi (2). Intrabronchial lipomas are 0.1-0.5% of all bronchial tumors (3). Pulmonary lipomas are uncommon, and peripheral pulmonary lipomas are extremely uncommon (1). Peripheral intrapulmonary lipomas are thought to arise from fatty tissue in the walls of peripheral bronchi at subsegmental level, and pathological analysis of resected lipomatous lesions, central and peripheral, has consistently demonstrated mature fatty tissue (2).

In our article, a case of peripheral intrapulmonary lipoma detected during thoracotomy for secondary spontaneous pneumothorax is presented.

CASE REPORT

A 76-year-old men was admitted to the hospital with a history of chest pain and shortness of breath. The patient, who has been followed up for chronic obstructive pulmonary disease for 15 years, has a history of smoking for approximately 40 years. In the chest X-ray and thorax computed tomography (CT) examinations, air density in the right hemithorax compatible with large pneumothorax in the pleural space and collapse in the right lung, large bullae and bronchiectatic changes in the upper zones of both lungs were observed. A soft

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tissue mass of 1.2 cm in diameter was detected incidentally in the anterior upper lobe of the right lung during thoracotomy performed for the patient due to a long-lasting pneumothorax that did not respond to treatment.

The specimen measured 1.2x1x0.6 cm and was light pink in color with round smooth surface. It was a 1.2 cm diameter, well circumscribed, thinly encapsulated, yellow mass in the cut surface.

Histologically, the tumour was surrounded by a thin connective tissue capsule and was composed of normal fat cells. There was a terminal bronchiole lined with respiratory epithelium in an area in the periphery of the lesion, and anthracose pigment was present around this area. Necrosis and atypia were not observed (Figs 1,2).

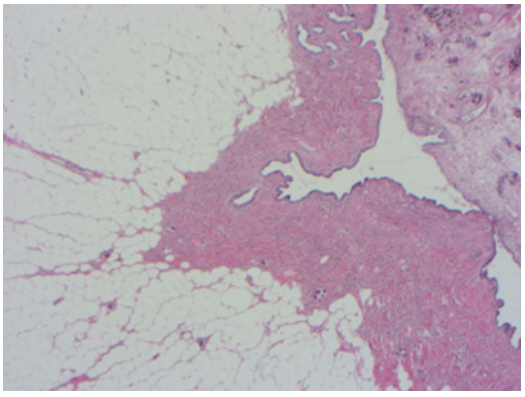

Fig. 1. Peripheral intrapulmonary lipoma: mature adipose tissue within terminal bronchi. (Hex50)

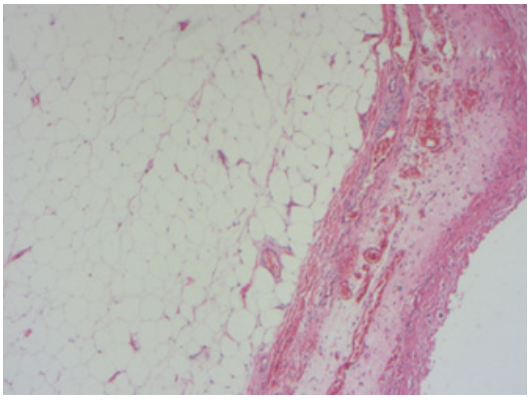

Fig. 2. Peripheral intrapulmonary lipoma: lipomatous lesion surrounded by thin connective tissue (HEx100)

DISCUSSION

Most of the pulmonary located lipomas occur intrabronchially (1). It is thought that intrabronchial pulmonary lipomas originate from submucosal adipose tissue (4). However the origin of the peripheral intrapulmonary lipomas is controversial. Some authors believe that it develops from adipose tissue in the peripheral bronchial wall, such as intrabronchial pulmonary lipomas (5). Some authors claim that its origin is subpleural adipose tissue (4). Obstruction is the cause of the symptoms in intrabronchial pulmonary lipoma. The clinical and radiological findings may include atelectasis or volume lost and infiltration or consolidation. In a subpleural lesion, respiratory system complaints are not expected in the patient; more common pleural abnormalities (1). In our case, no symptoms directly related to the lipoma developed. It was discovered incidentally during thoracotomy for pneumothorax secondary to chronic obstructive pulmonary disease.

Although it is not that obvious, there is a male predominance in intrabronchial lipomas (6). Of the 15 previously reported cases, 9 cases were reported in men and 6 cases in women aged 26-71 years with sizes ranging from 1 to 11 cm (7). Our case is the tenth male case and he is 76 years old, with the lesion was 1.2 cm in diameter.

Known risk factors for pulmonary lipomas are obesity, smoking and a history of diabetes (6). In our case, there was a history of smoking and chronic obstructive pulmonary disease, but there was no history of obesity or diabetes.

In the case of Erkılıç et al, during routine control, CT was performed

for the lesion that was noticeable on direct X-ray and a well-defined soft tissue mass was detected in the right lung periphery (1). In our case, the reason why it could not be detected radiologically before thoracotomy may be the accompanying pleural thickening and the small size of the lesion.

Histopathologically, pulmonary lipomas are not different from the counterparts located at other sites of the body. Moran et al reported two cases of spindle cell lipoma with endobronchial localization (8). Civi et al mentioned that there are bizarre, pleomorphic and multiple-nucleated giant cells, fat necrosis and cystic distances in some areas in their case report. They evaluated fat necrosis as a secondary change (9). Hasleton et al reported that occasionally, pulmonary lipomas may have small giant cells with bizarre nuclei scattered amid the mature fat resembling liposarcoma, but true lipoblasts are not seen (10). Erkılıç et al reported a lipoma case with myxoid degeneration (1). In our case there was no lipoblasts, different cell types, degeneration, necrosis or atypia. For these reasons, we evaluated our case as peripheral intrapulmonary lipoma.

Although they are rare, peripheral intrapulmonary lipomas should be considered in the differential diagnosis of solitary pulmonary lesions and their radiological differential diagnosis from other benign lesions and malign tumours may be difficult (11). Histologically, the differential diagnosis of a fat containing peripheral lung mass includes, in addition to lipoma, fibrolipomatous hamartoma and liposarcoma. The presence of other components such as islands of bone or cartilage or epithelial-lined clefts points to the correct diagnosis of hamartoma (9). In our case, there was no different component to suggest hamartoma. For these reasons, we evaluated our case as peripheral intrapulmonary lipoma.

CONCLUSION

The radiological appearance and presentation of the case and risk factors for malignancy are all considered in evaluating patients. Our case was found incidentally, but we think it is important to keep in mind peripheral pulmonary lipomas in the differential diagnosis as it will affect the treatment approach in solitary pulmonary lesions detected by radiological imaging. If necessary, an opinion for pathology is to provide a diagnostic work-up by frozen section for the first diagnosis of these lesions in correlation with radiographic findings and finally spare patients vital lung function by enucleation, wedge resection or segmentectomy.

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All authors have read and approved the manuscript. All authors acknowledge substantial participation and responsibility for this work.

REFERENCES

1- Erkiliç S, Koçer NE. Peripheral Intrapulmonary Lipoma: a Case Report. Acta Chir Belg. Nov-Dec 2007; 107(6): 700-2

2- Wood J, Henderson RG. Peripheral Intrapulmonary Lipoma: a rare lung neoplazm. Br J Radiol, 2004, 77: 60-2.

3- Zhao S, Shui Y. Multiple endo bronchial lipoma: a rare case report. BMC Pulm Med. 2020 Sep 22;20(1): 251.

4- Kim NR, Kim HJ, Kim JK, Han J. Intrapulmonary lipomas : Report of four cases. Histopathology , 2003, 42 : 305-6.

5- Hirata T, Reshad K, Itoi K, Muro K, Akiyama J. Lipomas of the peripheral lung – a case report and review of the literature. Thorac Cardiovasc Surg, 1989, 37 : 385-7.

6- Muraoka M, Oka T, Akamina S, Nagayasu T, Iseki M, Suyama N et al. Endobronchial lipoma. Review of 64 cases in Japan. Chest, 2003, 123 : 293-6

7- Moran AM, Jian BO, Mın H, Pechet T, Fogt F. Peripheral intrapulmonary lipoma in a 26 year old women- a case report. Pol J Pathol, 2011; 2: 113-115

8- Moran CA, Suster S, Koss MN. Endobronchial lipomas : a clinicopathologic study of four cases. Mod Pathol, 1994, 7 : 212- 4.

9- Civi K, Çiftçi E. Peripheral Intrapulmonary Lipoma: A case report and and review of the literature. Tuberk Toraks. 2006; 54(4): 374-7.

10- Hasleton PS. Spencer's Pathology of the Lung. 5. ed. United States of America, 1996: 875-987.

11- Allan JS. Rare solitary benign tumors of the lung. Semin Thorac Cardiovasc Surg , 2003, 15 : 315-22.

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Amyand's Hernia Detected During Elective Inguinal Hernia Surgery

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ABSTRACT

Amyand's hernia (AH) is the presence of the appendix vermiformis (AV) in the hernia sac. This case report is aimed to present the approach to the case of AH, which was detected in an elective inguinal hernia repair. A 44-year-old male patient was admitted with complaints of bilateral bulging and pain in the groin. On physical examination, there was bulging in the bilateral inguinal region, which was more pronounced when the patient was standing. It was observed that bulging increased with the Valsalva manoeuvre. Laparoscopic hernia repair was planned for the patient under general anaesthesia. An indirect inguinal hernia sac extending to the scrotum on the right and containing the omentum was seen. When the omentum was pulled into the abdomen, appendix vermiformis was seen in the hernia sac (Amyand's hernia). There was no sign of inflammation in the appendix vermiformis. Small adhesions between the hernia sac and the appendix vermiformis were removed, and the appendix vermiformis was removed from the sac without resection. Subsequently, bilateral inguinal hernia repair was performed laparoscopically. The patient was taken to the service after the operation, and he was discharged the next day of the operation without complications.

Keywords: Hernia, Appendix, Inflammation.

INTRODUCTION

An abdominal wall hernia is the protrusion of all or a part of any organ from the fascia surrounding the abdominal wall.[1] The most common cause of abdominal wall hernia is muscle layer weakness, or a congenital/acquired defect in the abdominal wall. The condition that the hernia sac contents can be returned to the abdominal cavity is called a reduced hernia. The condition that it cannot be sent is called an incarcerated hernia.[2] The most common cause of incarcerated hernia is adhesions. If incarcerated hernias show blood supply disorder over time and gangrene develops, this situation is called strangulation and requires emergency surgical intervention.

The most common type of hernia is an inguinal hernia. The omentum or small intestine is usually seen in the inguinal hernia sac. Its incidence is less than 1% among all inguinal hernias.[3] Amyand's hernia (AH) is defined as the presence of the appendix vermiformis (AV) in the hernia sac with or without inflammation. In case of inflammation of the AV in the hernia sac, hernia repair is performed together with appendectomy. If there is no inflammation, only hernia repair is sufficient.

This case report is aimed to present the approach to the case of AH, which was detected in an elective inguinal hernia repair.

CASE REPORT

A 44-year-old male patient was admitted to Erzurum Regional Training and Research Hospital, Department of General Surgery, complaining of bilateral bulging and pain in the groin. The patient, who was an active smoker for ten

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years, had no known additional disease. He stated that he had bulging and pain in the groin for about five years and wanted surgery because his pain had increased in the last months.

On physical examination, there was bulging in the bilateral inguinal region, which was more pronounced when the patient was standing. It was observed that bulging increased with the Valsalva manoeuvre. His leukocyte count was $8.6*10^3/mm^3$, which was in normal ranges. Complete urinalysis and other biochemical parameters were routine. Elective surgery was planned for the patient diagnosed with a bilateral inguinal hernia without needing any radiological imaging.

Laparoscopic hernia repair was planned for the patient under general anaesthesia. An indirect inguinal hernia sac extending to the scrotum on the right and containing the omentum was seen. When the omentum was pulled into the abdomen, appendix vermiformis was seen in the hernia sac (Amyand's hernia). There was no sign of inflammation in the appendix vermiformis (Figure 1). Small adhesions between the hernia sac and the appendix vermiformis were removed, and the appendix vermiformis was removed from the sac without resection. Subsequently, bilateral inguinal hernia repair was performed laparoscopically. The patient was taken to the service after the operation, and he was discharged the next day of the operation without complications.

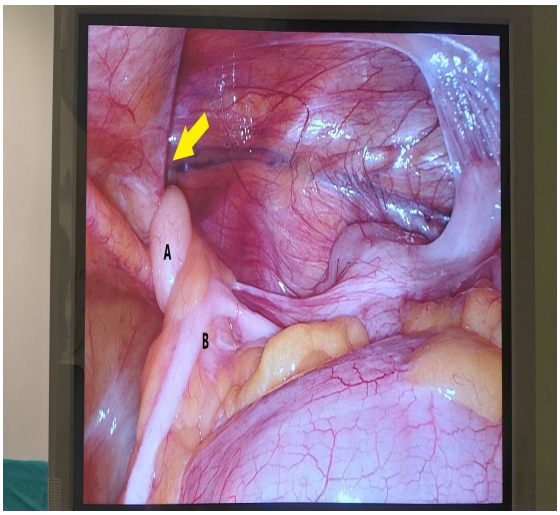

Figure 1. Laparoscopically detected Amyand's hernia (yellow arrow shows the inguinal orifice, A: appendix vermiformis, B: caecum).

DISCUSSION

Inguinal hernias are one of the most common surgical diseases. They are defined as the displacement of organs from the abdomen due to any weakness or defect in the abdominal wall. In most cases, the inguinal hernia sac contains the small intestine and omentum. The incidence of a normal AV within the hernia sac is 0.5-1%, and the incidence of an inflamed AV is 0.1%.[4] The probability of developing appendicitis increases due to compression of the hernia sac at the neck level or impaired blood supply leading to infection.[5]

Claudius Amyand, the father of Amyand's hernia (AH), was the first surgeon to perform the appendectomy detected in the inguinal hernia sac in 1736.[6] AH, which is more common in men, is usually right-sided.[7] However, AH on the left side has been reported in situs inversus totalis, mobile caecum, and intestinal malrotation.[8] In addition, Some cases of AH in women have been reported.[9] Losanoff and Basson classify[11] AH into four types based on the presence of appendicular inflammation, associated

peritonitis, or any other abdominal pathology. According to this classification, AV is regular in type 1 hernias, acute appendicitis with limited inflammation inside the hernia sac is present in type 2 hernias, acute appendicitis causes peritonitis in type 3 hernias, and acute appendicitis and other abdominal pathologies are present in type 4 hernias.[10] Surgical treatment depends on the type of AH.[11] In patients with acute appendicitis in the hernia sac, hernia repair without the use of prosthetic material is accepted by most surgeons after an appendectomy. In contrast, appendectomy is not recommended if a normal AV is detected in the hernia sac to avoid the risk of infection.[6] Our case was a 44-year-old male patient with a bilateral inguinal hernia, consistent with the literature. It was evaluated as type 1 AH, and hernia repair with a prosthetic material was performed laparoscopically without appendectomy.

In the laboratory examination, there is no specific marker for AH. However, there is an increase in inflammatory parameters such as leukocyte and c-reactive protein in cases where acute appendicitis clinic is evident. On the other hand, imaging tools play an important role during diagnosis. A blind-ending intestinal loop within the inguinal canal with or without surrounding inflammation is the main finding on ultrasonography[12], while an inflamed or non-inflamed appendix vermiformis within the inguinal canal is the finding of AH on computed tomography (CT). In the present case, the inflammatory parameters of the patient were unremarkable.

Preoperative diagnosis of AH has been reported in English literature.[8] However, it is often diagnosed intraoperatively.[13] This is because general surgeons do not routinely request preoperative imaging tests. There are statements in the literature that preoperative CT scans can be "helpful with minimal functionality" or "practically impossible".[9] However, preoperative CT will provide valuable information about the contents of the hernia sac. Our case was diagnosed with preoperative clinical examination, and radiological imaging was not performed.

CONCLUSION

Amyand's hernia (AH) is a rare form of inguinal hernia. Preoperative diagnosis is complex, and the diagnosis is usually made during surgery. It should be kept in mind that the diagnosis of AH may be encountered in patients of all age groups who will be operated on with a preliminary diagnosis of inguinal hernia. AH should be treated according to its type.

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REFERENCES

1. Lassandro F, Iasiello F, Pizza NL, Valente T, di Santo Stefano MLM, Grassi R, et al. Abdominal hernias: radiological features. W J Gastrointest Endosc. 2011;3(6):110-7.

2. Yang X-F, Liu J-L. Acute incarcerated external abdominal hernia. Ann Transl Med. 2014;2(11):110.

3. Morales-Cárdenas A, Plonedа-Valencia CF, Sainz-Escárrega VH, Hernández-Campos AC, Navarro-Muniz E, López-Lizarraga CR, et al. Amyand hernia: Case report and review of the literature. Ann Med Surg. 2015;4(2):113-5.

4. Anagnostopoulou S, Dimitroulis D, Troupis TG, Allamani M, Paraschos A, Mazarakis A, et al. Amyand's hernia: a case report. W J Gastroenterol. 2006;12(29):4761.

5. Kulasekeran N. A case report of Amyand hernia—radiological diagnosis and literature review. Egypt J Radiol Nucl Med. 2020;51(1):1-4.

6. Kalayci T, Iliklerden ÜH. Management of incidental Amyand hernia with a case report. East J Med. 2019;24(4):551-3.

7. Gurer A, Ozdogan M, Ozlem N, Yildirim A, Kulacoglu H, Aydin R. Uncommon content in groin hernia sac. Hernia. 2006;10(2):152-5.

8. Al Maksoud AM, Ahmed AS. Left Amyand's hernia: An unexpected finding during inguinal hernia surgery. Int J Surg Case Rep. 2015;14:7-9.

9. Bhatti SI, Hashmi MU, Tariq U, Bhatti HI, Parkash J, Fatima Z. Amyand's hernia: a rare surgical pathology of the appendix. Cureus. 2018;10(6):e2827.

10. Ülger B, Abdullah O, Eyüp Ö, Enver A, Girgin S. Sol Amyand herni: Nadir bir olgu. Dicle Med J. 2015;42(1):114-116.

11. Green J, Gutwein LG. Amyand's hernia: a rare inguinal hernia. J Surg Case Rep. 2013;2013(9):rjt043.

12. Ornelas-Cortinas GE, Cantu-Gonzalez JR, Enríquez-Rodriguez R, Montemayor-Martinez A, Negreros-Osuna A, Cortinas-Gonzalez JC, et al. Acute appendicitis in Amyand's hernia: ultrasound findings and histopathology correlation. A case report. J Surg Case Rep. 2019;2019(11):rjz335.

13. Taşkesen F, Arıkanoğlu Z, Okudan M, Egeli T, Çiftci T. Amyand hernisi: Olgu sunumu. J Clin Exp Invest. 2011;2(4):446-448.

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Anisocoria Caused by Datura Stramonium: A Case Report

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ABSTRACT

Plants found in nature have been consumed for centuries for nutrition as well as for treatment, but some of these plants have toxic properties. One of them is Datura Stramonium, also known as Angel's Trumpets plant. L-hyoscyamine, atropine, and scopolamine in the structure of this plant are responsible for the anticholinergic effects. Various symptoms may occur by touching this plant or consuming it through oral route. In this article, patient who had hand-eye contact after touching the Datura Stramonium plant and admitted to the emergency department with the complaint of unilateral pupil dilation in his right eye is presented.

Keywords: Anisocoria, Gardener's Pupilla, Angel's Trumpet Plant, Datura Stramonium, Mydriasis.

INTRODUCTION

Plants have been used for both nutritional and therapeutic purposes since humanity existed. Depending on the substances they contain, plants can have a variety of effects on the human body.

Datura Stramonium (DS), also known as the "Angel's Trumpet plant," can create anticholinergic effects due to L-hyoscyamine, atropine, and scopolamine, which form as a result of L-hyoscyamine racemisation. In oral use, it can cause serious, life-threatening systemic effects, as well as ocular effects when it comes into contact with the eye (1).

In this article, a case of anisocoria who had hand-eye contact with DS and subsequently developed mydriasis in the right eye is presented.

CASE REPORT

A 38-year-old male patient was admitted to the emergency department (ED) with a complaint of unilateral pupil dilation in his right eye. (Figure-1) He stated that there was no accompanying headache, eye pain, blurred vision, or double vision, no known ophthalmological problem; no previous trauma, and no eye drops he used. He stated that this situation occurred after working in the garden. It was thought that the reason for this situation could be a plant, seed, or pollen contact.

In the physical examination performed in the ED, the pupil of the right eye was dilated and

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did not respond to light reflexes. The neurological examination was normal. The patient was oriented and cooperative; his mental status was normal; motor, sensory, reflex, and cerebellar tests were symmetrical; his gait was stable. Other physical examination findings were normal.

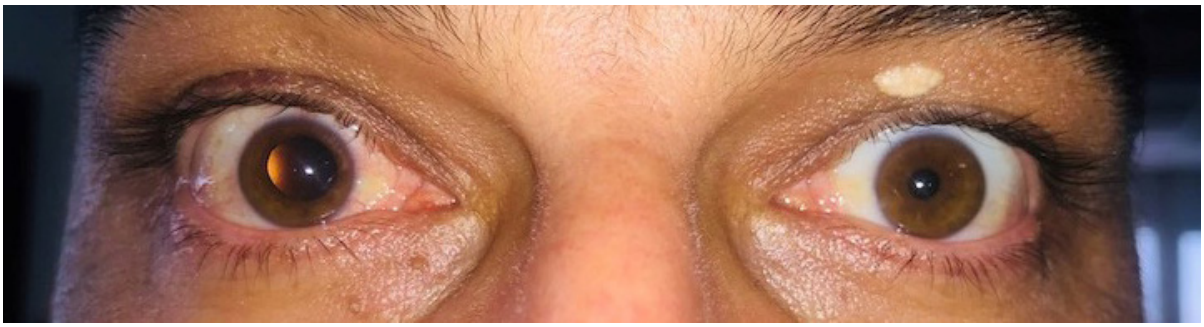

Figure1. Pupil dilation in his right eye.

The patient was consulted in ophthalmology. In the examination performed by the ophthalmologists, visual acuity was complete in both eyes; in the anterior segment examination, there was no finding other than mydriasis in the right eye; the fundus examination was normal in the left and right eye, eye movements were normal in the left and right eye, orthophoric in the primary position, and tonometry was within normal limits. It was stated that after the instillation of pilocarpine 2% ophthalmic solution in the patient's eyes, constriction was observed in the pupil of the left eye, and no response was obtained in the right eye. This situation was interpreted as pharmacological mydriasis.

The patient was asked to take a photograph of the plant he came into contact with within his garden, and after the literature search, it was found that this plant was DS (Figure-2), which can cause "Gardener's Pupilla" (2). He was called for a follow-up five days later. During the follow-up examination, the right eye pupil returned to normal.

Figure2. Datura Stramonium (Angel's Trumpets plant)

Advanced imaging methods were not used because the patient had no pathological neurological findings other than anisocoria and pharmacological mydriasis was considered a result of the tests performed.

DISCUSSION

Anisocoria should be evaluated systematically as it may point out the presence of a serious, potentially life-threatening clinical situation such as cerebrovascular diseases, aneurysms, or metastasis (3). The medical history, trauma status, and exposure history of the patient with anisocoria should be evaluated, and differential diagnoses should be identified in light of the data obtained after a detailed physical

examination.

Unilateral mydriasis after plant contact has been defined as “Gardener’s Pupilla” in the literature. (2). The substances that cause “Gardener’s Pupilla”, found in whole parts of the DS plant and responsible for the anticholinergic effects, are tropane alkaloids. The DS plant, which can be found abundantly in Türkiye, can be used by the populace for many diseases such as eczema, bronchitis, acne, and asthma due to its anticholinergic effects (4, 5).

Tropane alkaloids in DS inhibit the effect of acetylcholine by binding to their receptors, with competitive antagonism by acting on muscarinic acetylcholine receptors. (6) Different G protein-associated muscarinic receptors have been described in the human body. The iris sphincter and ciliary body contain 60-70% muscarinic receptors; M3 is the most abundant subtype, and alkaloids directly stimulate this receptor. (7) Tropane alkaloids are mainly absorbed into the humoral aqueous humor through the conjunctiva and cornea. The width of the iris is controlled by both the circular and radial muscles. The mechanism of mydriasis is caused by tropane alkaloids; the inability of the circular pupillary sphincter muscle to contract as a result of inhibition of acetylcholine stimulation and dilation of the pupil as a result of the balance shifting towards radial pupillary dilator muscle contraction. These alkaloids can also cause cycloplegic effects by paralyzing the ciliary muscles (6).

Yılmaz et al. reported that a 20-year-old male patient presented with complaints of blurred vision and sensitivity to light after contact with the Datura plant, and isolated left eye pupillary dilation was detected in the examination. They reported that pilocarpine 2% ophthalmic solution applied to the eyes was interpreted as pharmacological mydriasis as a result of no response in the mydriatic pupil (7) . Macchiaiolo et al. presented a case of acute anisocoria in a 12-year-old boy in their study. In this case report, they found that the patient’s anisocoria occurred after hand-eye contact while in the garden and that this condition was plant-based. No pathology was detected in advanced examinations such as Cranial Magnetic Resonance Imaging (MRI) (8). Firestone et al. reported that the unilateral isolated mydriasis observed in their cases with similar characteristics was of plant origin and that it could be diagnosed by anamnesis and the pilocarpine test without time-consuming and expensive procedures (3). These studies have similar features to our case.

There may be ocular exposure to the DS plant, as well as life-threatening systemic effects as a result of oral exposure. Taştekin et al. in their study presented two intoxication cases that were admitted to the ED with anticholinergic symptoms and followed up in the ICU (intensive care unit), after which it was understood that they ate the DS plant. In these cases, it is reported that the pupils are mydriatic as well as having anticholinergic systemic effects such as mucosal dryness (9).

CONCLUSION

The ocular and systemic effects of the DS plant, which is abundant in Türkiye, should be known by clinicians and should be considered in the differential diagnosis. Detailed anamnesis, literature research, and simple tests can protect the patient and the health system from time-consuming and expensive procedures.

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REFERENCES

1. Andreola B, Piovan A, Da Dalt L, Filippini R, Cappelletti E. Unilateral mydriasis due to Angel's trumpet. Clin Toxicol (Phila) 2008; 46(4): 329-31. Doi:https://doi.org/10.1080/15563650701378720
2. Levecq L. Didatic case: Gardener's eye. Bull Soc Belge Ophtalmol 2011; (317): 69.
3. Firestone D, Sloane C. Not your everyday anisocoria: Angel's trumpet ocular toxicity. J Emerg Med 2007; 33(1): 21-4. doi: 10.1016/j.jemermed.2007.02.046. Doi:https://doi.org/10.1016/j.jemermed.2007.02.046
4. Guven H. Environmental toxins: Herbal medicines and poisonings. Türkiye Klinikleri J Pharmacol-Special Topics 2003; 1: 58-61.
5. Işıkay S. Datura stramonium intoxication: A case report. [In Turkish] AKATOS 2011; 2:26-28. Doi:https://doi.org/10.5505/jaemcr.2011.55264
6. Yılmaz O, Kaçmaz T. Anisocoria due to the Datura plant: Gardener's Pupilla. [In Turkish] Journal of Traditional Medical Complementary Therapies 2018; 1(2): 88-92. Doi:https://doi.org/10.5336/jtracom.2017-59386
7. Honkanen RE, Howard EF, Abdel-Latif AA. M3-muscarinic receptor subtype predominates in the bovine iris sphincter smooth muscle and ciliary processes. Invest Ophthalmol Vis Sci 1990; 31(3):590-3.
8. Macchiaiolo M, Vignati E, Gonfiantini MV, Grandin A, Romano MT, Salata M, et al. An unusual case of anisocoria by vegetal intoxication: A case report. Ital J Pediatr 2010; 20(36): 50. doi: 10.1186/1824-7288-36-50. Doi:https://doi.org/10.1186/1824-7288-36-50
9. Taştekin F, Işıklı N. A case of anticholinergic intoxication: Datura stramonium intoxication. [In Turkish] Turkiye Klinikleri J Intern Med 2020; 5(1):42-5. Doi:https://doi.org/10.5336/intermed.2019-70268