Vol.2 No.3
Sept 2022
e-ISSN: 2785-8944

THE INTERVENTIONALIST

Scientific Journal of Medical Intervention

https://doi.org/10.32896/tij.v2n3

JOURNAL

eISSN 2785-8944

https://theinterventionalists.com

Editorial Team

EDITORIAL

On behalf of the editorial board of The Interventionalist Journal (TIJ), I would like to extend my deepest appreciation to the founder team, who had built the foundation of this journal.

The aim of The Interventionalist Journal is to provide and served as a platform for all clinicians who are doing minimally invasive procedures to share their findings, expertise, innovations and experiences at the regional and international significance. We envisaged being providing a high-standard and evidence-based platform for publishing high impact publications.

I am humbly inviting each of you to actively participate and contribute to The Interventionalist Journalas an author, reviewer, and reader.The Interventionalist Journal has a strong starting point and I am confident that, we can eventually venture into new heights.

Sincerely,
Ezamin Abdul Rahim
MD, MMed Rad
Editor-in-Chief
The Interventionalist Journal

THE INTERVENTIONALIST JOURNAL

Contents

Volume 2 **Number 3** **September 2022**

No. *Title* *Page*

Penumbra™

62

68

72

RED™

REPERFUSION CATHETERS

REDglide™ Technology
Designed to enhance delivery in tortuosity

62
.062" ID
1.93mm (0.76") OD
138cm Length

68
.068" ID
2.13mm (0.84") OD
132cm Length

72
.072" ID
2.16mm (0.85") OD
132cm Length

NOSE STUD SCREW ASPIRATION – A TINY FOREIGN BODY WITH POTENTIALLY HUGE DISASTER: 2 CASES WITH DIFFERENT WAYS OF RETRIEVAL

K. L. Ng[1], N. C. Huan[1], U. N. Daut[2], N. A. Muhammad[1], M. Z. Nasaruddin[1], J. A. Abdul Rahaman[1]

[1]Department of Pulmonology, Hospital Serdang, Jalan Puchong, 43000, Kajang, Selangor, Malaysia
[2]Department of Medicine, Hospital Pengajar Universiti Putra Malaysia, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia

Correspondence author: K.L. Ng, Department of Pulmonology, Hospital Serdang, Jalan Puchong, 43000, Kajang, Selangor, Malaysia. Telephone: 0167228390. Email: khailip08@yahoo.com

DOI: https://doi.org/10.32896/ tij.v2n3.1-5
Submitted: 10.02.2022
Accepted: 20.08.2022
Published: 30.09.2022

ABSTRACT:
Foreign body aspiration refers to accidental inhalation of foreign body into the respiratory tract. More commonly observed in children, foreign body aspiration is less common in adults. Traditionally observed amongst Indian women, nose piercing and jewellery are gaining popularity in various communities for the past decade. Aspiration of tiny nose jewellery such as nose stud screws is a serious and potentially fatal event. Small foreign bodies may dislodge further into the subsegmental bronchus, rendering bronchoscopic retrieval technically challenging. Herein, we report the first 2 cases of nose stud screw aspiration. Both of our patients were asymptomatic. Both foreign bodies were successfully retrieved via bronchoscopy using different tools and methods.

Keywords: Aspiration, Bronchoscopy, Foreign body, Nose stud, Piercings.

INTRODUCTION:

Nose piercing is traditionally a common practice among women of Indian ancestry. The practice of nose piercing has gained significant popularity in various communities worldwide for the past decade. The practice can potentially lead to aspiration of nose jewellery such as screws of nose studs. Aspiration of small foreign bodies can be silent although potentially serious and life-threatening sequelae can happen in long term. Herein, we present 2 patients of Indian ancestry who aspirated screw of nose studs with different methods of retrieval.

CASE REPORT:

Case 1

A 50-year-old lady of Indian descent with diabetes mellitus, hypertension and end-stage kidney disease was referred for an abnormal chest radiograph. Her chest radiograph was done initially to assess her fluid status post haemodialysis for chronic kidney failure. The chest radiograph revealed a foreign body at the right lower lobe lung field (Figure 1(A) and (B)). She was otherwise asymptomatic and could not recall any episodes of foreign body aspiration. Flexible bronchoscope did not reveal any foreign body in the right segmental bronchi due to contact bleeding secondary to friable bronchial mucosa. Urgent computed tomography revealed a screw shaped foreign body in the posterior basal segment (RB10) of the right lower lobe with segmental collapse (Figure 1(C) and (D)). After a multidisciplinary discussion involving pulmonologists, cardiothoracic surgeons, anaesthetists, patient herself and family members, a decision was made to proceed with foreign body

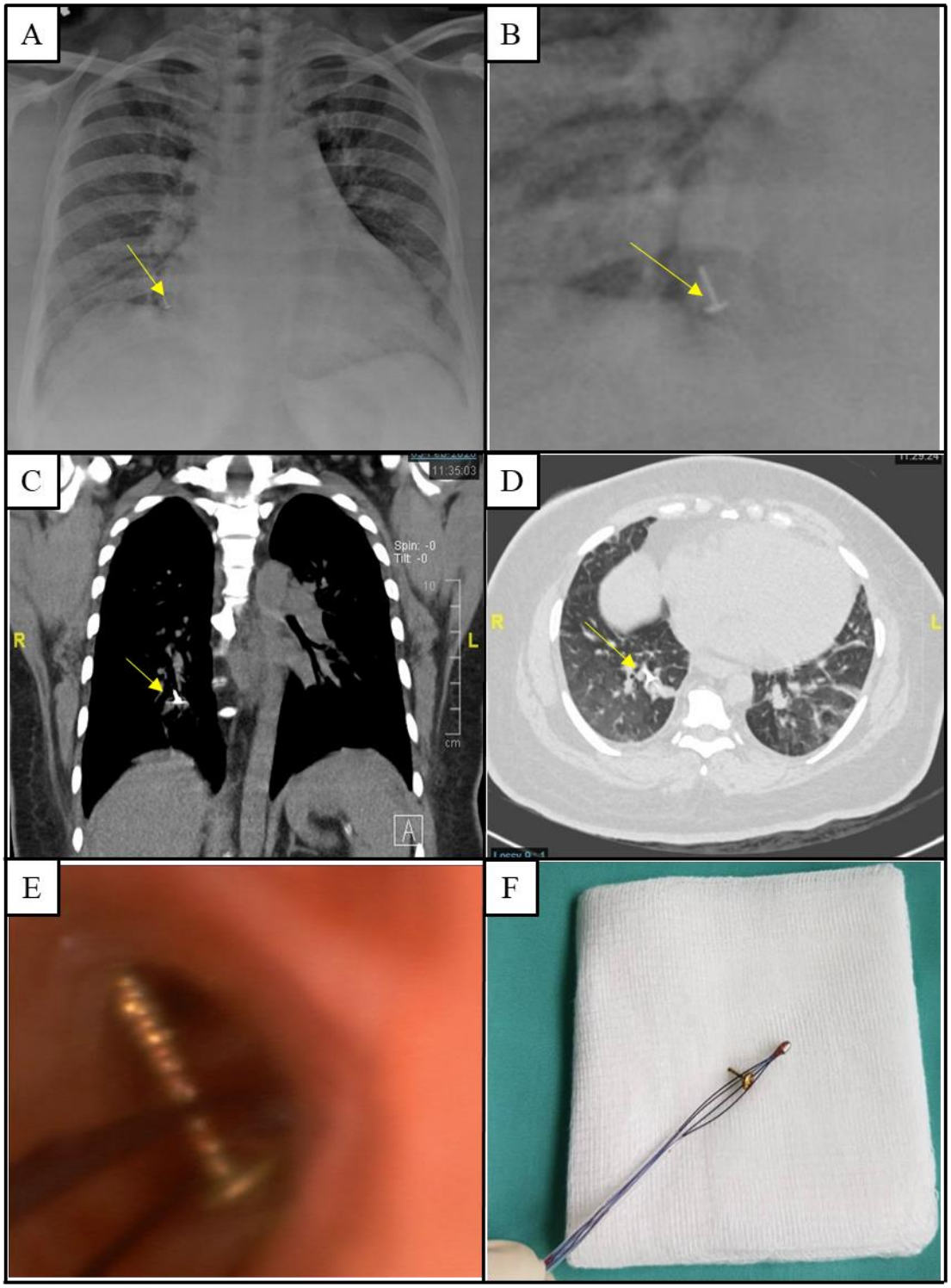

Figure 1: Chest radiograph, Computer tomography, bronchoscopy image, and image of the foreign body. (A) Chest radiograph showing small radio-opaque foreign body in the right lower lobe (yellow arrow). (B) Magnified image of the foreign body in the chest radiograph (yellow arrow). (C) Contrasted computed tomography of thorax (mediastinal window) in coronal view revealed a screw shaped foreign body in the posterior basal segment (RB10) of right lower lobe (yellow arrow). (D) Contrasted computed tomography of thorax (lung window) in axial view showing the foreign body located at posterior basal segment (RB10) of right lower lobe with segmental collapse (yellow arrow). (E) Foreign body embedded into bronchial mucosa, surrounded by granulation tissue. (F) Successful retrieval of screw of nose stud using retrieval basket.

removal under rigid bronchoscopy and fluorography guidance. Due to the distal location of foreign body, we utilised a thin bronchoscope (aScope™ 4 Broncho, Ambu, Ballerup, Denmark; outer diameter 3.8cm, working channel 1.2cm) to aid in localization of the foreign body. A metallic foreign body- specifically a nose stud screw, was discovered in the lateral segment of right lower lobe (RB9) and was embedded into bronchial mucosa, surrounded by granulation tissues (Figure 1(E)). The nose stud screw was carefully retrieved by using a retrieval basket after initial unsuccessful attempts to remove it via grasping forceps (Figure 1(F)). Fluorography post procedure showed no residual foreign body. There were no immediate complications and she was discharged well on the next day.

Case 2

A 38-year-old Indian lady with schizophrenia was referred for incidental finding of a foreign body in the right perihilar region on chest radiograph. Her chest radiograph was initially done to rule out physical injuries as she complained of chest discomfort after a fall while in the ward. She could not recall any foreign body aspiration episodes. Computed tomography confirmed the foreign body in the right main bronchus (Figure 2(A) and (B)). Initial attempts to remove the foreign body was unsuccessful via flexible bronchoscope as she was uncooperative despite on sedation. After a multidisciplinary discussion, a decision was made to proceed with rigid bronchoscopy under general anaesthesia. A golden nose stud screw was discovered at the opening of medial segment (RB5) of right middle lobe. The nose stud screw was gently removed by using a rigid forceps under direct visualisation. She was successfully extubated on the same day and discharged well a day later.

DISCUSSION:

Foreign body aspiration is most commonly observed in children less than 4 years old, but can happen in adults, especially among those with neurological disorders [1-3]. The following groups of adults are at increased risks of foreign body aspiration, namely: (1) adults who undergo oropharyngeal procedures, (2) patients intoxicated with sedatives or alcohol, (3) patients with underlying neurological or psychiatric disorders, (4) adults who are subjected to oropharyngeal procedures and (5) adults with various nasal or oral appliances [3].

Commonly aspirated foreign bodies include organic materials such as bones, seeds, nuts as well as inorganic materials such as coins and pins [4]. Larger foreign bodies tend to lodge at the trachea or main bronchi (especially at the right main bronchus) [1, 2, 4]. This is due to the fact that the right main bronchus is wider and follows a more vertical trajectory compared to a more horizontal orientation of the left main bronchus, making it easier for foreign bodies to lodge at the right side instead of the left due to gravity. Patients with foreign body inhalation can present with symptoms such as cough, shortness of breath and haemoptysis. Occasionally, some can present acutely with asphyxia. Clinical presentations are usually acute onset following aspiration, but sometimes can be undetected for several years until imaging such as chest radiograph is done [5]. In contrast, small foreign bodies such as screw of nose stud as illustrated above did not give any symptom to the patients. In both of our cases, the foreign bodies were found incidentally by chest radiograph done for other reasons.

Airway foreign bodies should be regarded as a medical emergency. Foreign body in the airways and its evolution can cause bronchial stenosis, abscess, atelectasis, pneumonia and bronchiectasis [4, 6]. Various methods of foreign body retrieval utilizing flexible or rigid bronchoscopy have been described in literature [1, 2, 4, 7]. In both of our cases, we resort to using rigid bronchoscopy as flexible bronchoscopy were unsuccessful in retrieval of nose stud screws. We were unable to locate the foreign body in the distal location in the first case due to contact bleeding. In the second case, the patient was uncooperative. Performing rigid bronchoscopy under general anaesthesia for such conditions provide better control of the airway as well as allowing utilization of various tools such as grasping forceps and retrieval baskets. It also prevents dislodgement of foreign body while passing narrow portions of the airway, such as through vocal cord and epiglottis.

Removing small foreign bodies such as nose studs or nose stud screws can be challenging as they can easily dislodge to distal airways and in areas not visualized by flexible bronchoscopy. In the first

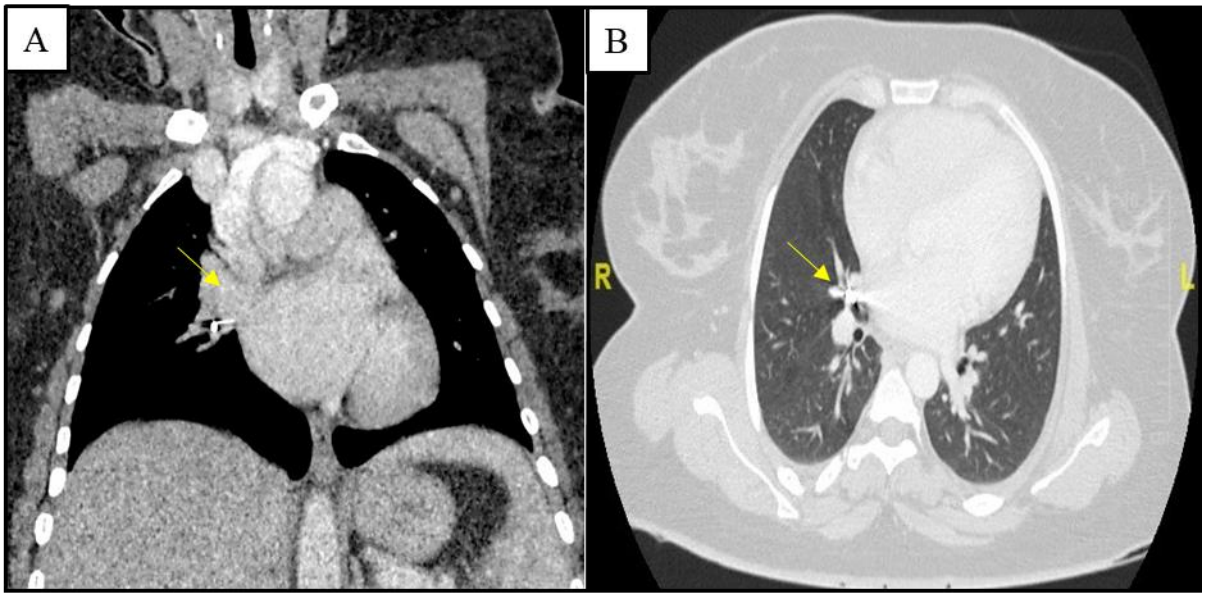

Figure 2: Computer tomography image and image of foreign body. (A) Contrasted computed tomography of thorax (mediastinal window) in coronal view demonstrating foreign body in the right main bronchus. (B) Contrasted computed tomography of thorax (lung window) in axial view demonstrating foreign body in right main bronchus.

case, we were only able to visualize the foreign body when using a thin scope. We managed to retrieve the small foreign body only via retrieval basket. If all bronchoscopy methods fail to retrieve the foreign body, patient would need to go through surgical procedure such as segmentectomy of the lung to remove the foreign body. If foreign body is located near the main bronchus, retrieval is usually straight forward with rigid bronchoscope and rigid forceps.

As both of our patients were asymptomatic, this raises the question on whether a conservative approach would be acceptable. Nagano et. al. described a patient presenting with massive haemoptysis after a prolonged period of relative quiescence due to a long-standing small foreign body. That patient unfortunately required a left lower lobectomy for foreign body retrieval and for control of haemoptysis[8]. Wu et. al. on the other hand reported a case of foreign body causing bronchiectasis, causing recurrent infection and haemoptysis [9]. We believe that timely diagnosis and prompt removal of foreign body is vital to avoid such complications.

While aspiration of scarf pins among Muslim girls and ladies who wear hijab, called the “hijab syndrome” have been extensively reported [10, 11], there is a paucity of publications regarding “nose-stud syndrome” among Indian communities. To the best of our knowledge, this is the first case report delineating aspiration of screw of nose studs and their retrieval methods. The incidence and burden of nose stud aspiration remains unknown, and is likely underreported and underrecognized, as patients can remain asymptomatic. Unlike the hijab syndrome, which is largely confined to hijab wearers, the implication of “nose stud syndrome” could potentially be even bigger. Nose piercing and jewellery is traditionally a common practice amongst women of Indian ancestry, bearing both cultural and religious significance. In the past decade however, body piercing and jewellery has increased in popularity in both Western and Eastern communities. Various parts of the body including the tongue, lips, nose, navel or even genitals may be pierced. The nose can be pierced through nasal septum or in fleshy nares before applying nasal jewellery. Apart from aspiration of nasal jewellery, other complications include infection, nasal hematoma, perichondritis, bleeding and necrosis of cartilaginous nasal walls can occur as a result of nasal piercings and jewellery [12].

CONCLUSION:

In conclusion, foreign body aspiration can still occur in adults despite being uncommon. Aspiration of small objects such as nose studs can go unnoticed as patients might be asymptomatic.

Removal of retained foreign bodies requires bronchoscopy for both diagnosis and treatment. Surgery is reserved for cases with extensive pulmonary damage or in an event where bronchoscopy fails to retrieve foreign bodies. Finally, we hope that our case report can help to increase awareness and understanding of potential dangers of nose piercing.

STATEMENT OF ETHICS:
Informed consent was obtained from the patient for the publication of this work.

CONFLICTS OF INTEREST:
The authors have no potential conflicts of interest to disclose.

FUNDING:
This article did not receive specific funding.

DATA AVAILABILITY STATEMENTS:
Further information regarding the data used for this work can be obtained from the corresponding author upon reasonable request via email at khailip08@yahoo.com.

REFERENCES

1. Sehgal IS, Dhooria S, Ram B et. al. Foreign body inhalation in the adult population: Experience of 25,998 bronchoscopies and systematic review of the literature. Respir. Care. 2015;60(10):1438-1448.
2. Debeljak A, Sorli J, Music E et. al. Bronchoscopic removal of foreign bodies in adults: Experience with 62 patients from 1974–1998. Eur Respir J. 1999;14(4):792.
3. Jaggi S, Kumar A, Garg K et. al. Foreign body aspiration: An unusual presentation and outcome. J Clin Diagn Res. 2017;11(9): OD08-OD09.
4. Dikensoy O, Usalan C, Filiz A. Foreign body aspiration: clinical utility of flexible bronchoscopy. Postgrad Med J. 2002; 78(921):399-403.
5. Lin L, Lv L, Wang Y et. al. The clinical features of foreign body aspiration into the lower airway in geriatric patients. Clin Interv Aging. 2014; 9:1613-1618.
6. Oliveira CF, Almeida JF, Troster EJ et. al. Complications of tracheobronchial foreign body aspiration in children: Report of 5 cases and review of the literature. Rev. Hosp. Clín. 2002;57(3):108-111.
7. Kogure Y, Oki M, Saka H. Endobronchial foreign body removed by rigid bronchoscopy after 39 years. Interact Cardiovasc Thorac Surg. 2010;11(6):866-868.
8. Nagano H, Maeda A, Kato T et. al. Massive haemoptysis caused by a long-standing foreign body in the airway. Respirol. Case Rep. 2020;8(7):e00647.
9. Wu XL, Wu L, Chen ZM. Unusual bronchial foreign bodies with localized bronchiectasis in five children. Case Rep Med. 2019:1-8.
10. Baram A, Kakamad FH, Bakir DA. Scarf pin-related hijab syndrome: A new name for an unusual type of foreign body aspiration. The J Int Med Res. 2017;45(6):2078–2084.
11. Othman S, Kakamad FH, Salih RQ et. al. Hijab Syndrome; a neglected but serious health problem in Muslim communities: A systematic review. Edorium J Public Health. 2018;5:1-5.
12. Meltzer DI. Complications of body piercing. Am Fam Physician. 2005;72(10):2029-2034

CONSERVATIVE TREATMENT OF HUGE BLADDER NEUROFIBROMA: A CASE REPORT

A. E. J. Mohd[1], F. A. F. Omar[1], L. K. S. Christopher[1], A. M. G. Khairul[1], S. K. Lai[2]

[1]Department of Urology, Faculty of Medicine, Universiti Putra Malaysia, Seri Kembangan, Selangor, Malaysia
[2]Department of Pathology and Microbiology, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

Correspondence author: A. E. J. Mohd, Department of Urology, Faculty of Medicine, Universiti Putra Malaysia, Seri Kembangan, Selangor, Malaysia. Telephone: +60195525878
Email: azrul.eimirul@upm.edu.my

DOI: https://doi.org/10.32896/tij.v2n3.6-11
Submitted: 07.07.2022
Accepted: 20.09.2022
Published: 30.9.2022

ABSTRACT:
Neurofibroma with involvement of the urinary bladder is a rare condition, that has been reported in less than 80 cases reported worldwide. We present a 22-year-old lady with a known history of childhood neurofibroma type 1. Incidental findings of a huge pelvic mass during laparoscopic surgery for initially thought of a gynae pathology. Further investigation after that with Computed Tomography (CT) scan displayed a bladder mass occupying the abdomen cavity with regards to neurofibroma of the bladder. A core Biopsy of the mass was done and confirmed the pathology. Clinically patient was asymptomatic with the mass. The patient refused surgical intervention. Follow-up for 2 years with serial imaging showed no significant progression of the disease. It is important to determine any Sarcomatoid/malignant changes to decide on further management of bladder neurofibroma.

Keywords: bladder , neurofibroma , neurofibromatosis , NF1 , plexiform neurofibroma

INTRODUCTION:

Neurofibroma of bladder are approximately less than one-third of these cases are in the pediatric population. In the bladder, neurofibromas arise in the nervous ganglia of the bladder wall. Most Neurofibroma of bladder are identified at young age and no exception in our case. Majority of those patient that are symptomatic presented with pain, haematuria, lower urinary tract symptoms or obstruction. It was different in this case where it was incidentally found during gynaecology surgery and patient was asymptomatic. The way mass appeared in CT are worrying of malignancy or possibility presence of sarcomatoid changes. So far to date, surgical removal of bladder mass is the only way to successfully eliminate the risk of possible malignancy changes in the future. Inadequate evidence of other treatment modalities such as radiotherapy and chemotherapy able to salvage of this condition have been reported. However, managing by conservative treatment is considered still good choice as risk of malignant changes are varied from 5-20% from collection of reported case so far. We present a massive plexiform Neurofibroma of bladder, managed by conservative management for up to 2 years following patient decision without evidence of significant changes.

CASE PRESENTATION:

A 22-year-old lady with Neurofibroma type 1 since childhood was under gynecology follow up

for irregular menses. Ultrasound abdominal assessment showed possible right ovarian cyst, 10 cm in the largest diameter, suspected of an ovarian mass. She was scheduled for laparoscopic right oophorectomy by gynecology team. Intraoperatively a huge pelvic mass possibly arising from the bladder was found, and it was attached to the anterior abdominal wall. However reproductive organs were normal in appearance. Urologist was called-in the operating theatre for opinion. The procedure was abandoned in view of uncertainty of the diagnosis and possible dealing with malignant tissue without proper investigation. CT abdomen pelvic was arrange post procedure. Further history, patient had normal urination without any history of lower urinary tract symptoms, haematuria, or history of recurrent urinary tract infection.

Flexible cystoscopy revealed bladder irregular mucosal surface suggesting of bladder neurofibroma with no intravesical mass. Multiple flat sessile lesions generalized scattered over bladder. Biopsy was performed by an interventional radiologist. Core tissue bladder mass was successfully obtained and sent for histopathology. Plexiform bladder neurofibroma was confirmed without malignant or sarcoma features seen. Findings were discussed with patient and offered for surgery partial cystectomy. However, patient was not keen for surgery. Serial imaging follow-up with CT and ultrasound was done for 2 years that showed no signs of progression, suggesting a stable disease. There is no hydronephrosis on both kidneys with renal function urine examination showed normal parameters.

No genetic test was done for the patient. On examination pelvic mass was palpable, however no stigmata of neurofibroma were found on examination externally.

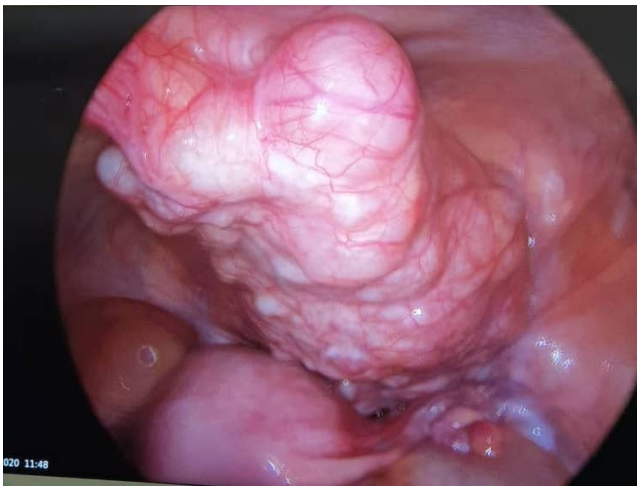

Figure 1: An image taken during laparoscopic surgery showed huge pelvic mass occupying anterior part of pelvic extend superiorly near anterior abdominal wall. Reproductive organ visualised in this image showed normal findings.

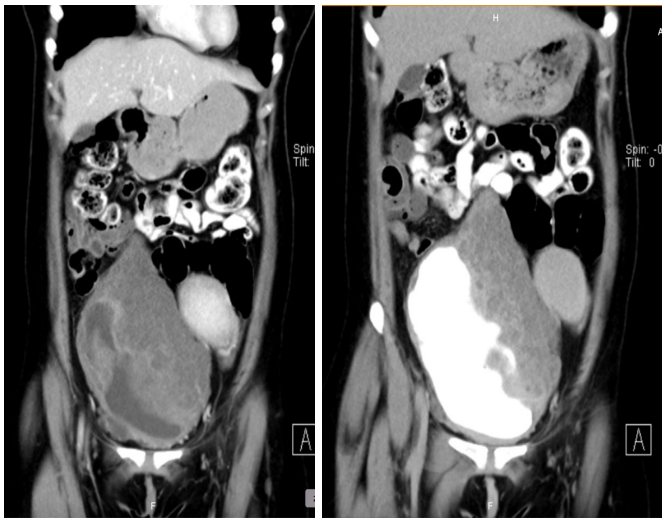

Figure 2: Delayed phase coronal view of CT scan showed huge bladder mass occupying abdomen with Irregular bladder mucosa of bladder.

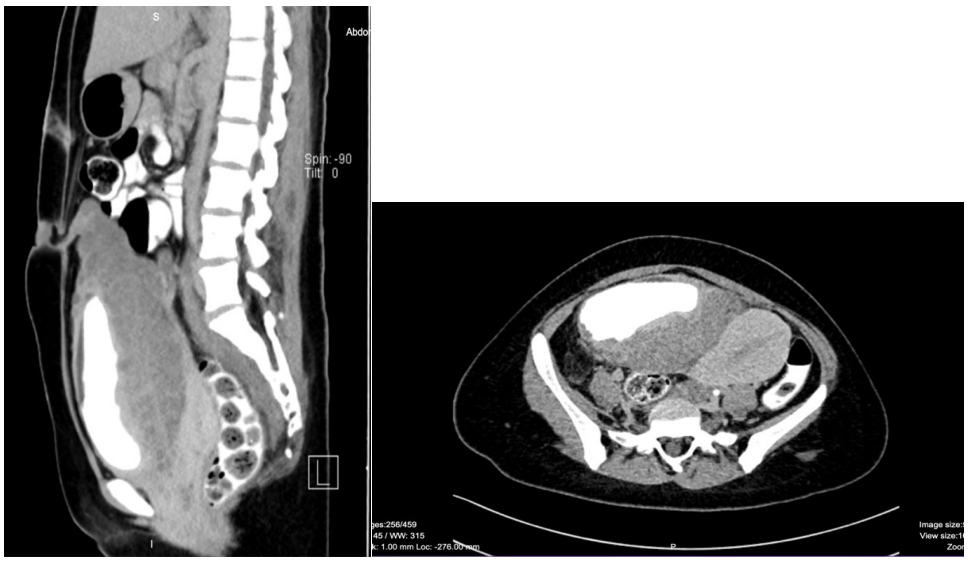

Figure 3: Sagittal and axial view of CT kidney in delayed phase. There is multiple nodule similar density noted in the umbilical region, anterior to bladder and subcutaneous tissue suggestive of neurofibroma.

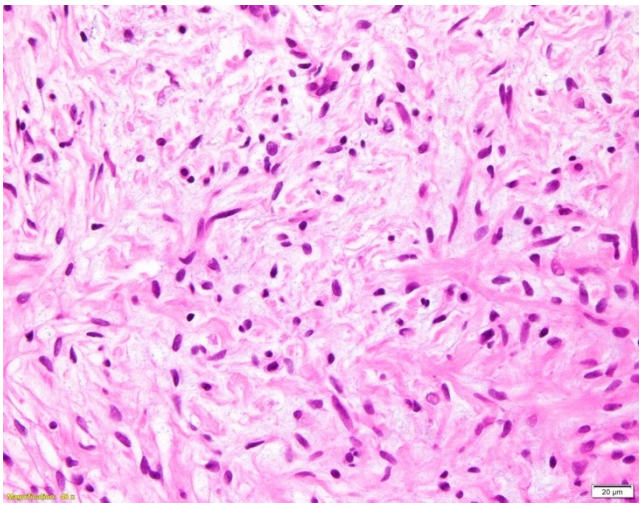

Figure 4: Figure 4 shows histological image of bladder neurofibroma, sample taken using CT guided biopsy at the core of the mass. There are spindle cells proliferation in variable cellularity forming nodular pattern in areas. The spindle cells show mild pleomorphism with wavy nuclei and inconspicuous nucleoli. Mitosis is not observed. No necrosis is noted. Mast cells are present. Immunohistochemical study showed the spindle cells are focally positive for S100. No sarcomatoid changes were seen.

DISCUSSION:

Neurofibromatosis type 1 (NF1) is an autosomal dominant transmitted disease with various clinical manifestations. Neurofibromatosis (NF1) affecting approximately 1 in 3000 individuals. It can be presented with alterations of skin pigmentation, iris Lisch nodules, and multiple benign neurofibromas usually constitute the clinical picture. The genitourinary tract is rarely involved in NF1, and less than 80 cases were reported in the literature to date. [2]

Bladder neurofibroma typically occur in young patients with neurofibromatosis type 1. Neurofibroma of the bladder presents early in life and occurs more often in the setting of generalized disease than as isolated visceral neurofibromatosis. The mean age at diagnosis is reportedly 17 years (range, 1 month to 54 years), and the male-to-female ratio is 2.3:1.

Clinical presentations can be voiding/storage symptoms, flank pain with urinary incontinence. The diagnosis is confirmed by histopathological and immunohistochemical examination. Histologically, the tumors are usually of the plexiform and diffuse type. Histopathologically, they stain positive for protein S100 with immunohistochemical techniques, and this is the pathognomonic pathology finding of schwannomas.

In our case we present a young lady with a known case childhood NF type 1 presented with irregular menses without any urinary symptoms. For bladder neurofibroma possibility of malignant transformation or sarcomatoid transformation is a must to look for. From the literature, it was found out about 5-10% tumors underwent malignant transformation during follow-up; and 12-29% for non-genitourinary involvement. [4] None of these occurred in children. The risk of malignant degeneration changes increases with advancing age [3] and after an operation for benign neurofibromas. [4]

Looking at the CT image and intraoperative laparoscopic findings, the bladder mass was huge with the largest diameter of 15 cm occupying the anterior abdominal wall and pelvic space displacing bowel superiorly and reproductive organ posteriorly. Possible malignant changes need to rule out so possible surgical intervention can be offered. Multidisciplinary discussion with oncology, intervention radiologist (IR) and urology team was conducted. Core biopsy was obtained with help of IR to give more ideas of diagnosis.

The histologic appearance of neurofibroma may simulate a differential diagnosis of low grade malignant peripheral nerve sheath tumour, leiomyoma, low grade leiomyosarcoma and rhabdomyosarcoma. In this case the was absent of mitotic figure, necrotic cell and spindle cell proliferation in nodular pattern suggesting benign findings. Immunohistochemical study shows the spindle cells are focally positive for S100 with presence of Mast cells. This distinctive clinical, histologic and immunohistochemical findings proved a definitive diagnosis. [3]

Treatment of these tumors has included cystectomy, transurethral resection, observation, radiotherapy, chemotherapy, and urinary diversion. Some of patients who presents with symptoms of bladder overactivity were treated with botox intravesical injection after fail treatment of oral anticholinergic.[6]

For malignant transformation or malignant peripheral nerve sheath tumor (MPNST), surgery is the mainstay of treatment. However, oncology treatment such as chemotherapy and radiotherapy are also offered even the outcome is still uncertain. From a meta-analysis that was done by Cai et al that study all reported case of MPNST on different extremities was studied and conclude the prognosis are poor with high chance of local recurrence. Worse prognosis factors mainly associated with NF 1 mutation, large size, deep to fascia, high grade, metastases, and location (trunk and head and neck). [7]

Significant morbidity may be associated with neurofibroma of the bladder. Involvement of the bladder is often extensive, necessitating cystectomy in approximately one-third of cases. For surgical treatment option that available are mainly pelvic exenteration with urinary diversion with formation of ileal conduit.

For conservative treatment, a study with follow up patient for over a mean follow-up of 9.6 years with none of the patients experienced malignant transformation.[1] Our patient was following up for 2 years with regular ultrasound kidney, ureter, bladder surveillance so far did not show any change with symptoms and radiologically. Was offered for surgical treatment in keeping worried of malignant transformation, refused of it in keeping mind of morbidity of the post operation.

No proper suggested tools for follow up assessment of mass has been suggested. From radiological aspects of neurofibromas are characteristic; especially on MRI and they can frequently evoke the diagnosis, which is confirmed by biopsy. We believe MRI could be an excellent tool for non-invasive follow-up [8] as it gives more detail in possible sarcomatoid changes of mass during follow up. No specific guideline in follow up neurofibroma of bladder, in our case we used regular ultrasound in 6 month and yearly CT to look for any significant change in size and symptoms.

CONCLUSION:

Presentation of bladder neurofibroma are rare. In this case with huge bladder mass with mass effect in abdomen are alarming for malignant changes, however no evidence of it on histopathology examination. Surgery treatment was offered however patient preferred to be regular imaging surveillance. Follow up for 2 years showed no significant changes clinically and radiologically.

ACKNOWLEDGEMENT:

We acknowledge those who have been directly or indirectly involved in the management of this patient throughout his hospitalization and discharge.

STATEMENT OF ETHICS:

Ethical approval was not required as this is a case report. Informed written consent to participate was provided by all participants.

CONFLICTS OF INTEREST:

The authors declare they have no competing interests.

FUNDING:

Not applicable.

DATA AVAILABILITY STATEMENTS:

The detailed that support the findings of this case report are available from the corresponding

author, [A.E.J.Mohd], upon reasonable request. No additional data than the one presented in this article was used.

REFERENCES:

1. Cheng L, Scheithauer BW, Leibovich BC, Ramnani DM, Cheville JC, Bostwick DG. Neurofibroma of the urinary bladder. Cancer. 1999 Aug 1;86(3):505-13.
2. Üre I, Gürocak S, Gönül II, Sözen S, Deniz N. Neurofibromatosis type 1 with bladder involvement. Case Reports in Urology. 2013 Jul 28;2013.
3. Umakanthan S, Naik R, Bukelo MM, Rai S, Prabhu L. Primary bladder neurofibroma: a rare case with clinical implications and diagnostic challenges. Journal of Clinical and Diagnostic Research: J Clin Diagn Res. 2015 Sep;9(9): ED05.
4. Baugh B, Stencel M, Patel A, Hale N. An isolated case of an incidentally discovered neurofibroma of the urinary bladder. Urol. Case Rep. 2020 Sep 1; 32:101215.
5. Zugail AS, Benadiba S, Ferlicot S, Irani J. Oddities sporadic neurofibroma of the urinary bladder. A case report. Urol. Case Rep. 2017 Sep 1;14:42-4.
6. Cai Z, Tang X, Liang H, Yang R, Yan T, Guo W. Prognosis and risk factors for malignant peripheral nerve sheath tumor: a systematic review and meta-analysis. World Journal of Surgical Oncology. 2020 Dec;18(1):1-2.
7. Dogan GM, Siğirci A, Karaca L. Neurofibromas of the bladder in a child with neurofibromatosis type 1. International braz j urol. 2018 Nov; 44:1256-7.

FALSE NEGATIVE BRONCHIAL ARTERY CALIBER ON MULTI-DETECTOR COMPUTED TOMOGRAPHY IN PREDICTING OUTCOME OF BRONCHIAL ARTERY EMBOLIZATION IN PATIENT WITH HAEMOPTYSIS

T. H. Soo[1], A. Tharek[1], I. Ibrahim[1], M. H. Zakaria[1], M. N. Mohd Yaakob[1], M. F. A. K. Kamis[1], M. A. Malik[2]

[1]Department of Radiology, Hospital Pengajar Universiti Putra Malaysia, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia.
[2]School of Medicine, KPJ Healthcare University College, 71800, Nilai, Negeri Sembilan, Malaysia.

***Corresponding author:**
T. H. Soo, Department of Radiology, Hospital Pengajar Universiti Putra Malaysia, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400, Serdang, Selangor, Malaysia. Telephone: +60397695001. Email: suzyhui88@upm.edu.my

DOI: https://doi.org/10.32896/tij. v2n3.12-15
Submitted: 19.07.2022
Accepted: 28.09.2022
Published: 30.09.2022

ABSTRACT:
Bronchial artery embolization was first performed in 1973 by Remy et al with widespread acceptance since then. Multi-detector computed tomography (MDCT) CT angiography (CTA) is currently the gold standard imaging modality used to identify the site and cause of bleeding in patient presented with haemoptysis. Bronchial artery anatomies and precise location can be obtained by scrutinizing CTA prior to interventional procedures. CTA has the advantage of not only can preclude the need of digital subtraction angiography (DSA) in inappropriate cases, but also can shorten the intervention procedure timing. We present a case of false negative bronchial artery caliber seen on MDCT which was abnormal in DSA.

Keywords: Angiography, Arterial cannulation, Angioseal.

NARRATIVE:
67-year-old woman with underlying bronchiectasis referred from private medical center for recurrent episodes of streaky hemoptysis for 5 months duration. Her full blood count parameters were within normal limits: hemoglobin of 11.1 g/dl and platelet count of 200 × 10^3 /µL. Renal and coagulation profile were normal. Multi-detector computed tomography (MDCT) revealed bilateral lungs bronchiectasis predominantly involving right lower lobe, middle lobe and lingular segment of left upper lobe (Figure 1(A) and (B)). She has type IV bronchial arteries anatomy: 1 left bronchial artery and 2 right bronchial arteries. 1 All the arteries arise from anteromedial aspect of descending thoracic aorta at T5-T6 level. The 2 right bronchial arteries were dilated ranging 2-3 mm with tortuous course distally (Figure 1(C)-(E)). The left bronchial artery is normal in size measuring 1.5 mm and no evidence of aneurysm (Figure 1(F)). Subsequent

selective bronchial artery catheterization demonstrates tortuosity the left (Figure 2(A)) and one of the right bronchial arteries (Figure 2(B)) which were successfully embolized with polyvinyl alcohol and coil. There was failure to cannulate one of the right bronchial arteries.

Bronchial artery embolization was first performed in 1973 by Remy et al with widespread acceptance since then. MDCT CT angiography (CTA) is currently the gold standard imaging modality used to identify the site and cause of bleeding in patient presented with haemoptysis. It is fast and important prior to interventional procedures. Meanwhile, other cause of haemoptysis for instances pulmonary thromboembolism or pulmonary sequestration that eliminate the need of BAE can be detected as well. (2) CTA also can replace the routine preliminary flush aortography. Although the importance of CTA cannot be overemphasized, our case reveals false negative left bronchial artery caliber on MDCT which was proven to be abnormal on digital subtraction angiography (DSA). Therefore, MDCT should be complemented with DSA in managing patient with haemoptysis.

STATEMENT OF ETHICS:

Informed consent was obtained from the patient for the publication of this work.

CONFLICTS OF INTEREST:

The authors have no potential conflicts of interest to disclose.

FUNDING:

This article did not receive specific funding.

DATA AVAILABILITY STATEMENTS:

Further information regarding the data used for this work can be found from the link provided: https://interventionjournal.padimedical.com/external/osimis/e9be1f6c-ae6ce4f4-eb7d1547-0e842c4f-bd8b4b3b.

The access password can be retrieved from the corresponding author upon reasonable request.

REFERENCES

1. Chun JY, Morgan R, Belli AM. Radiological management of hemoptysis: a comprehensive review of diagnostic imaging and bronchial arterial embolization. Cardiovascular and interventional radiology. 2010 Apr;33(2):240-50.
2. Gupta M, Srivastava DN, Seith A, Sharma S, Thulkar S, Gupta R. Clinical impact of multidetector row computed tomography before bronchial artery embolization in patients with hemoptysis: a prospective study. Canadian Association of Radiologists' Journal. 2013 Feb;64(1):61-73.

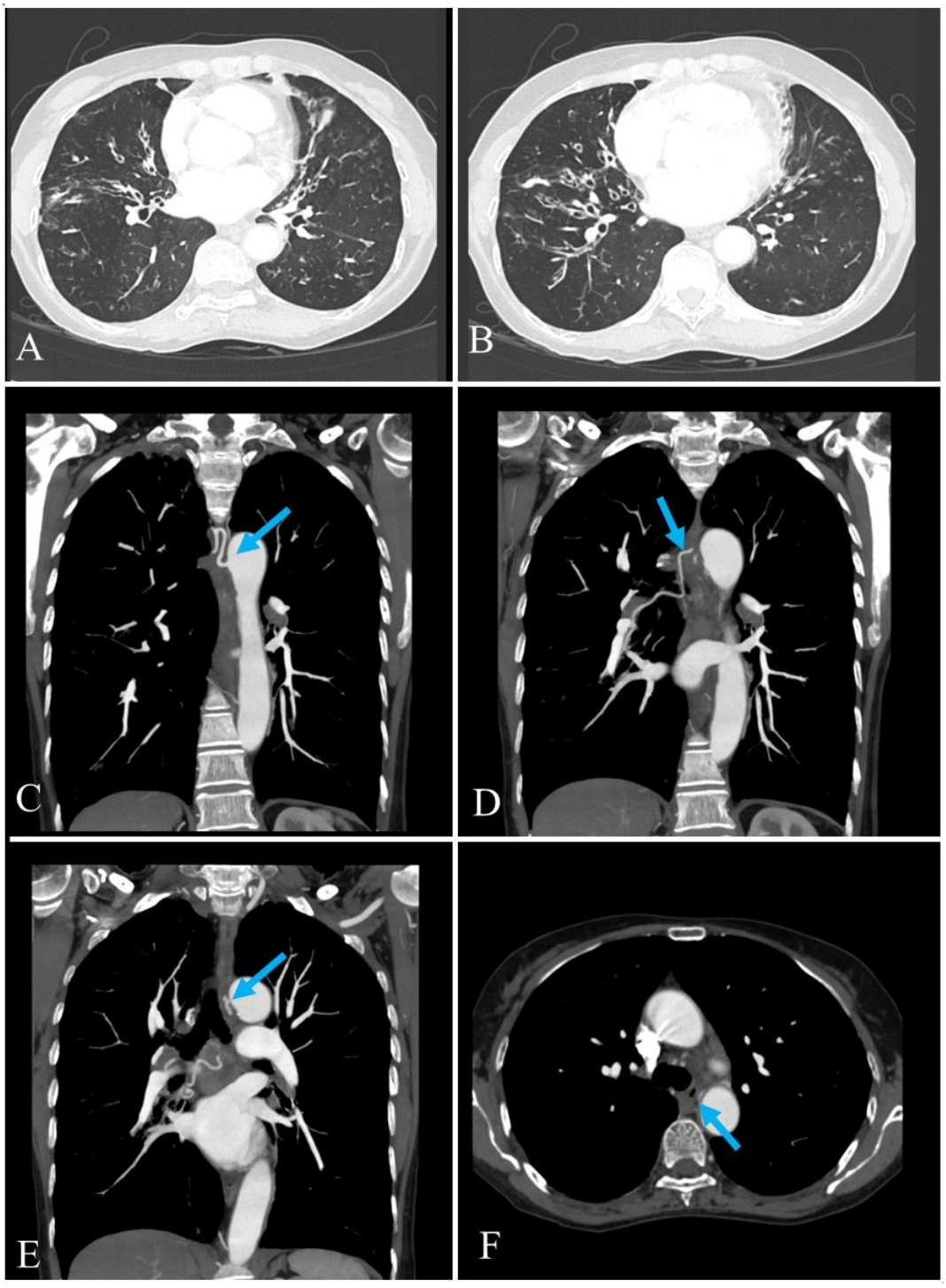

Figure 1: Multi-detector computed tomography CT angiography (CTA) with lung window reconstruction in axial view (A) and (B) demonstrates bilateral lungs bronchiectasis predominantly involving right lower lobe, middle lobe and lingular segment of left upper lobe. CTA with maximum intensity projection revealed type IV bronchial arteries anatomy: 2 right bronchial arteries and 1 left bronchial artery. The 2 right bronchial arteries are dilated ranging 2-3mm in diameter with tortuous course distally (arrows in (C), (D) and (E)). The left bronchial artery is normal in size measuring 1.5mm and no evidence of aneurysm (F).

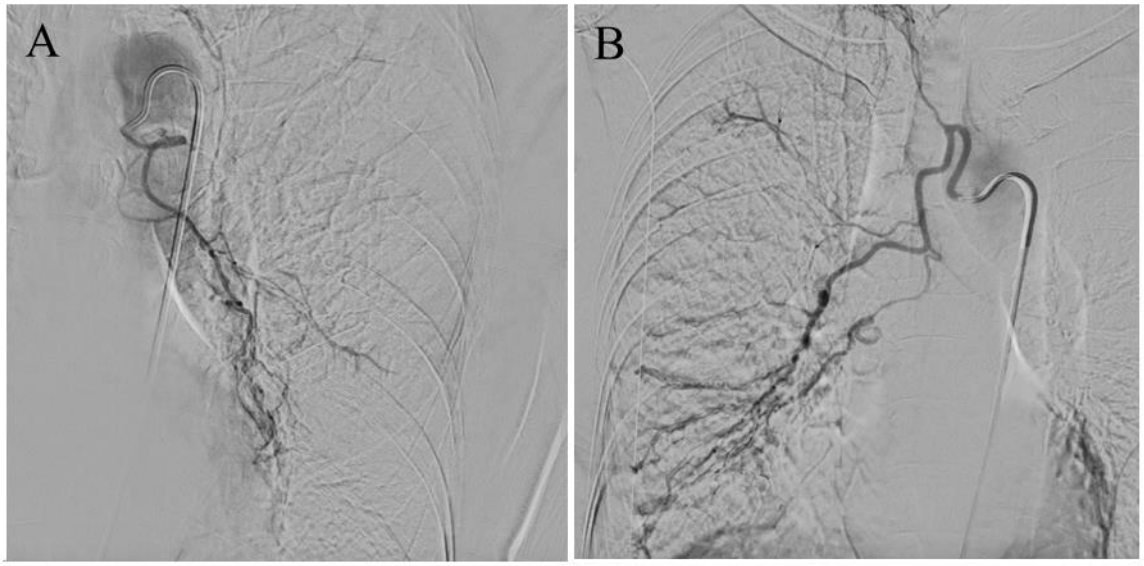

Figure 2: Digital subtraction angiography with selective bronchial artery catheterization confirmed dilated and tortuous left (A) and one of the right bronchial arteries (B) which were successfully embolized with polyvinyl alcohol and coil. There was failure to cannulate one of the right bronchial arteries.

balt solutions
for AVM treatment

squid
EVOH co-polymer

sonic
detachable tip microcatheter

balt
inspiring innovation

Join us for Hands-On
AVM Workshops. Register your interest with
carlteh@medcinpharma.com / hiba@medcinpharma.com

MEDCIN PHARMA SDN BHD (587084 - D)

Imported and distributed by :
Medcin Pharma Sdn Bhd (587084-D)
H-G-3A, Blok H, Sekitar 26 Enterprise,
Persiaran Hulu Selangor, Seksyen 26,
40400 Shah Alam, Selangor Darul Ehsan
Tel: +60 (03) 5192 3966
Fax: +60 (03) 5191 9539
http://www.medcinpharma.com