

Corpus Alienum (Hijab Needle) Intra Lung Parenchyma with Bronchoscopy, Video Assisted Thoracoscopic Surgery (VATS), Thoracotomy Conversion

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ABSTRACT

Background: Foreign body aspiration is a life threatening condition that must be treated immediately, such as nuts, plastic, hijab needles. Incidents commonly occur in children, especially under 3 years old. Clinical manifestations may vary from mild to severe. Treatment includes bronchoscopy, VATS and thoracotomy. Video Assisted Thoracoscopy Surgery can reduce postoperative morbidity, pain scale and length of stay. Conversion from VATS to open thoracic surgery is 2-23%

Case Presentation: A 12 year old girl was admitted with chief complaints inhaling a hijab needle one day before admission. The patient tried to remove the needle by pulling out the needle from the base of the tongue. Saliva was not mixed with blood. There was no shortness of breath, cough, nor pain when swallowing, neither nausea nor vomiting. Physical examination was within normal limit. A chest x-ray showed a needle-like object projecting from the right bronchus at Th6-Th7. Bronchoscopy was carried out as first attempt, followed by VATS and eventually converted to thoracotomy. Patient remained stable after procedure and discharged without complications.

Conclusion: Needle hijab aspiration often occurs in adolescent girls which can cause morbidity. The procedures may vary from minimally invasive such as bronchoscopy, to more invasive procedures such as VATS and thoracotomy

Keyword: corpus alienum, VATS, thoracotomy

INTRODUCTION

Foreign body aspiration is a condition that must be treated immediately and can be life threatening. Incident generally occurs in children, especially children aged under 3 years old.^{1,2} Katrancioğlu's research reported 59.3% out of 263 cases were children aged 0-3 years. The most common location of foreign bodies inhalation is in the right bronchus. Foreign objects may vary from nuts, plastic, hijab needles. Treatment time was found to be 1-7 days. Approximately 7% of children die due to aspiration.¹ Symptoms after choking vary according to the location of the foreign object. Symptoms may include coughing, choking, stridor, wheezing and shortness of breath. The triad of bronchial obstruction is coughing, wheezing and decreased breath sounds.²

Posteroanterior and lateral chest x-rays are the first supporting examination that can be carried out in diagnosing foreign body aspiration. Foreign bodies commonly appears radiolucent. Only 10-15% of foreign bodies are radiopaque. Abnormal images on chest x-rays due to aspiration of foreign bodies can include air trapping with hyperinflation, atelectasis, pneumonia. The sensitivity and specificity of chest x-ray are

61% and 77%. CT scan has better sensitivity, yet has limitation in price and high radiation exposure. Rigid bronchoscopy is required in cases where radiographic results are normal.^{2,3}

Bronchoscopy is a diagnostic and therapeutic procedure in cases of foreign body aspiration. Bronchoscopy is recommended in cases of suspected foreign body with normal radiographs.³ Video Assisted Thoracoscopic Surgery (VATS) is a minimally invasive procedure in diagnostic and therapeutic lung surgery. VATS can reduce postoperative morbidity, pain scale and length of stay. Conversion from VATS to open thoracic surgery is 2-23%.⁴

CASE PRESENTATION

A 12 year old girl was admitted to the PICU ward after surgery, with the chief complaint of swallowing a hijab needle one day before admission. The patient initially placed the hijab needle between her lips, at the same time the patient laughed and inhaled the hijab needle. After the needle was inhaled, the patient tried to remove the needle by pulling out the needle from the base of the tongue. Saliva was not mixed with blood. No shortness of breath and no cough. There was no pain when swallow. No nausea nor vomiting. The patient has been treated at the regional hospital, has had a thorax x-ray done, and has been referred to a tertiary hospital. Physical examination revealed the

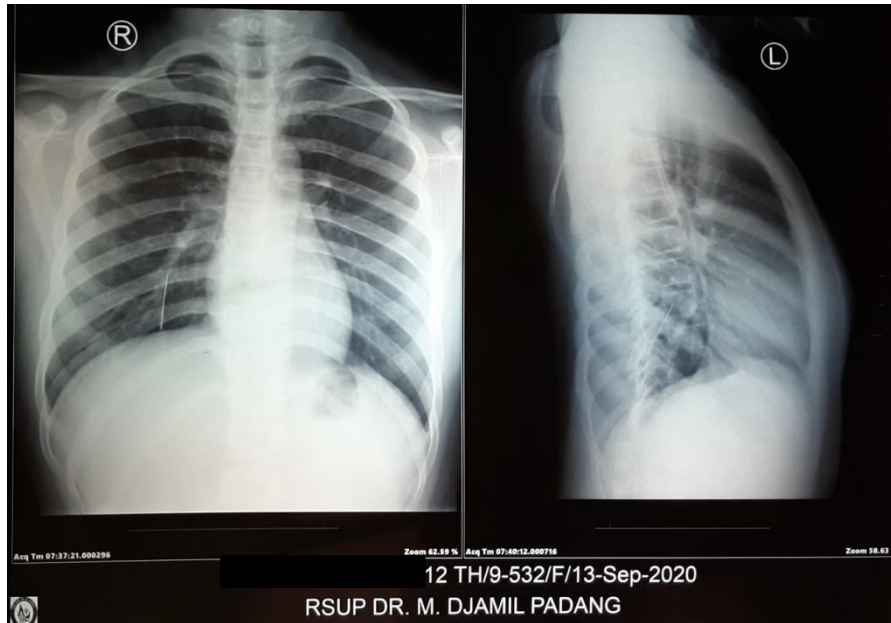
patient looked moderately ill with full consciousness, blood pressure 129/76 mmHg, pulse rate 86 times/minute, respiratory rate 22 times/minute, temperature 36.9°C. Body weight was 50 kg, height 154 cm. Anthropometric status BW/U 113.6%, TB/U 100%, BW/TB 113.6% with the impression of overweight. Skin was warm. No palpable of enlarged lymph nodes. Head was round and symmetrical. Hair did not fall out easily. The conjunctiva of the eye was not pale, sclera was not icteric. Both pupils were isochoric, diameter 2mm/2mm. No nasal flare. No abnormalities were found in the ears. T₁-T₁ tonsils were not hyperemic, pharynx was not hyperemic. Lip and mouth mucose was wet, Jugular venous pressure 5-2 cm H₂O. Chest was symmetrical, right and left hemithorax movements were the same, there was no retraction. The right and left hemithorax breath sounds were the same, vesicular, no rhonchi, no wheezing. Cardiac examination revealed ictus cordis was not visible, the size of heart was normal, the rhythm was regular, and there was no murmurs. Abdomen was not distended, tympanic percussion, supple, liver and spleen are not palpable, normal positive bowel sounds. There was no abnormalities on the back. There was no abnormalities found in the genital organs. Pubertal status was A2M2P2. Warm acral limbs, good perfusion, normal positive physiological reflexes. Pathological reflexes were absent.

Laboratory Result

Parameter	Result	Parameter	Result
Haemoglobine	14 g/dL	AST	18 U/L
White blood cell	6840/mm ³	ALT	17 U/L
Platelet	360,000/mm ³	RBG	99 mg/dL
Red blood cell	5,330,000	Ureum	14 mg/dL
Hematocyte	42%	Creatinine	0.5 mg/dL
Basophil	0	Sodium	142mmol/L
Eosinophil	1	Potassium	3.9mmol/L
Neutrophyl	70	Chloride	106mmol/L
Limphocyte	24	PT	9.8 (9-12.2)
Monocyte	5	APTT	27.9 (20.8-28.2)
ALC	1641	INR	0.93 (<1.2)
NLR	2.91		

Chest X-ray

Impression: There is an image of a foreign body resembling a needle projecting from the right bronchus at the level of Th6-Th7



Diagnosis

Corpus alienum at regio right bronchus

Treatment

a. Bronchoscopy

- Rigid bronchoscopy was performed under general anesthesia. From rigid bronchoscopy, no foreign objects were found in the bronchial branches.

b. Planning: perform VATS

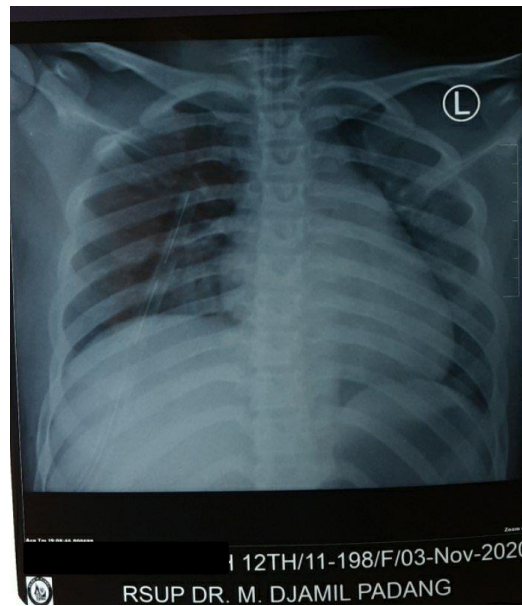
Follow up

The patient was admitted to PICU after VATS conversion thoracotomy. The patient underwent the procedure under general anesthesia, with a duration of approximately 6 hours. The patient was placed on a ventilator after surgery, and extubated on the second day. After surgery, the patient had a chest tube installed in the right hemithorax, and chest tube was released on the third day after surgery. The patient was discharged 4 days after surgery.

Foreign body:



Chest X-ray AP/Lateral after surgery



Impression : suspect right atelectasis DD/pneumonia

DISCUSSION

A 12 year old girl was admitted with a diagnosis of corpus alienum a/r hemithorax (D). chief complaint was inhaling a needle hijab one day before admission. From the anamnesis, it was found that the patient did not complain of shortness of breath nor cough. From physical examination of the thorax, no abnormalities were found. In accordance with Sink et al's research, aspiration of foreign bodies into the airways can be asymptomatic.³ The patient had needle hijab aspiration which fairly occurs frequently in teenagers who wear the hijab. This report was similar to the one conducted by Abrose suggesting hijab needles or pin needles are a common cause in teenagers.² Radiological examination revealed a foreign object at the projection of the right bronchus which was accordance to research by Katrancioglu et al suggesting the most common place for foreign bodies is in the right bronchus.¹

The patient underwent a supporting examination in the form of a chest x-ray, this is in accordance with Sink et al and Acharya et al who stated that a simple supporting examination to confirm the diagnosis of foreign body aspiration is a chest x-ray and the results obtained are commonly

radioopaque objects and should be visible on the chest x-ray.^{3,5} The patient underwent rigid bronchoscopy to evacuate the foreign body. This is in accordance with Acharya et al's research which states that the initial action for evacuating foreign bodies is to use rigid bronchoscopy.⁵ In this patient no foreign objects were found when rigid bronchoscopy was performed, in this case it would probably give better results if rigid bronchoscopy was accompanied by endoscopy in accordance with research conducted by Ozdemir which stated that rigid bronchoscopy accompanied by endoscopy provided better evaluation results by being able to evaluate up to distal bronchus.⁶ In patients undergoing VATS, after no foreign objects were found on rigid bronchoscopy, as reported by Asaf et al suggesting thoracoscopy may give good results after unsuccessful rigid bronchoscopy.⁷ The patient underwent a thoracotomy conversion because the VATS procedure had not been able to evacuate the foreign body due to difficult access, this is in accordance with research by Agzarian et al which stated that the VATS procedure could be converted to open thoracic surgery due to difficult access.⁴

CONCLUSION

Needle hijab aspiration often occurs in adolescent girls which can cause morbidity. The procedures may vary from minimally invasive such as bronchoscopy, to more invasive procedures such as VATS and thoracotomy.

Declaration by Authors

Ethical Approval: None

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