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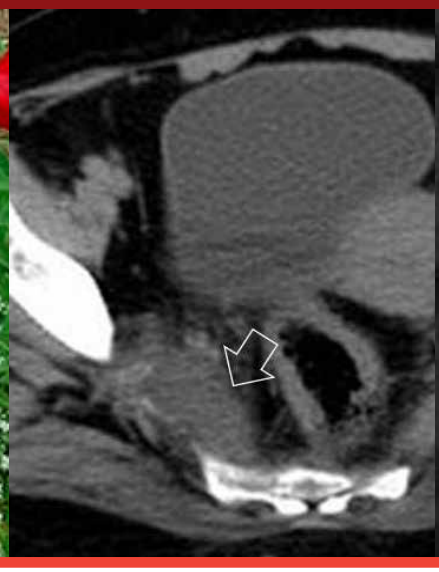

## ORIGINAL ARTICLE



## CASE REPORTS



## LETTER TO THE EDITOR



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The Cyprus Journal of Medical Sciences (Cyprus J Med Sci) is the peer-reviewed, open access, international publication organ of Cyprus Turkish Medical Association. The journal is printed three times a year in April, August and December. The publication language of the journal is English.

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Editorial and publication processes of the journal are shaped in accordance with the guidelines of the international organizations such as the International Council of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the Committee on Publication Ethics (COPE), the European Association of Science Editors (EASE).

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# CYPRUS JOURNAL OF MEDICAL SCIENCES

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A letter of submission must be included in all manuscripts, including revised manuscripts.

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A separate title page should be submitted with all submissions and should include the title of the manuscript, name(s), affiliations and major degree(s) of the author(s) and source(s) of the work or study, a short title (running head) of no more than 50 characters. The name and e-mail address of the corresponding author should be listed on the title page. Grant information and other sources of support should also be included on the Title page. Individuals who contributed to the preparation of the manuscript but do not fulfil the authorship criteria should be acknowledged in the title page.

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Original Articles: Acceptance of original papers will be based upon the originality and importance of the investigation.

Original Articles should be structured with Introduction, Materials and Methods, Results and Discussion subheadings. The number of references cited should not exceed 35 and the main text should be limited to 4000 words. An original article can be signed by maximum 6 authors unless it is a multi-center study or that it required extensive labour.

Introduction: Provide background information that will orient the general reader.

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State if informed consent was obtained from each patient and that ethic committee approval was obtained.

Results: Use tables and figures for better understanding. Please refer to the instructions before uploading images to the website.
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Statistical analysis should be performed in accordance with guidelines on reporting

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When a drug, product, hardware, or software mentioned within the main text product information, including the name of the product, producer of the product, city of the company and the country of the company should be provided in parenthesis in the following format: "Discovery St PET/CT scanner (General Electric, Milwaukee, WI, USA)"

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Figure legends should be listed at the end of the main document.

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## Contents

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## From the President

Dear Colleagues,

I am writing to you with a whole new excitement. For nearly two years we, Cyprus Turkish Medical Association, have worked on to clarify a scientific publication. Our efforts finally have come to an end. We are proud to publish the first issue of Cyprus Journal of Medical Sciences.

Dear Colleagues, Cyprus Turkish Medical Association with 59 years of experience and with over 1,000 physicians as members is one of the most powerful non-governmental and professional organizations in Northern Cyprus. Our Union has a strong scientific structure. We provide job training and work on public health. Again, the data is going to fight for better health care system in the country and deal with the problems of doctors and dentists. Environmental issues, quality and accreditation of education and of course social problems and social events in our country have always been on the agenda of Cyprus Turkish Medical Association.

This physician organization is well-established and has proved its associational identity for a scientific publication. Our journal was planned to be a publication with an international identity and accreditation. In this journal, you will find scientific papers and research from all fields of health sciences and you will be able to publish your own papers.

Our country is going through bad times in many ways. Let's not forget the challenges and the dark days in the history of the community. In order to be able to overcome the problems and challenges, we, the physicians, need to work harder and produce scientific work that will shed light to darkness.

I wish and hope that Cyprus Journal of Medical Sciences will contribute to science and be beneficial to our world.

I greet you all with affection and respect,

**Dr. Filiz Besim**
**President of Cyprus Turkish Medical Association**

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# CYPRUS JOURNAL OF MEDICAL SCIENCES

## Editorial

Dear Collegues,

We are happy to present you the first issue of the Cyprus Journal of Medical Sciences, the publication organ of Cyprus Turkish Medical Association. We think that this journal will act as an important platform for disseminating knowledge both in Cyprus and the World. It will provide academics with opportunities to enhance their scientific investigations, report new rare cases and put forward their ideas which will be added to literature.

The Cyprus Journal of Medical Sciences is the peer-reviewed, open access, international publication. The journal will be printed three times a year in April, August and December. The publication language of the journal is English. The Cyprus Journal of Medical Sciences aims to publish manuscripts at the highest clinical and scientific level on all fields of medicine. The journal will publish original papers, review articles, case reports and letters. Editorial and publication processes of the journal are shaped in accordance with the guidelines of the international organizations such as the International Council of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the Committee on Publication Ethics (COPE), the European Association of Science Editors (EASE).

We are hoping to have the Cyprus Journal of Medical Sciences covered in most of the major indexing services within the first year of publication. Our aim for the near future is to have the journal indexed in both PubMed and Web of Science so the visibility of our content can be amplified with the help of these platform. Of course, before all this, we want our journal to be a reliable and reputable publication. We can only succeed at this with your help. We look forward to receiving your valuable manuscript submissions.

We hope that, our journal will be at the highest clinical and scientific level. We will work hard to ensure that it is!

Best regards,

**Dr. Sonuç Büyük**
**Editor**
**Vice President of Cyprus Turkish Medical Association**

CYPRUS JOURNAL OF MEDICAL SCIENCES

Original Article

DOI: 10.5152/cjms.2016.32

# Percutaneous Tracheostomy Application to Geriatric Patients in an Intensive Care unit by Anaesthesiologists: An Analysis of 47 Cases

**Fulya Yılmaz Duran, Duygu Albayrak**

**Department of Anaesthesiology and Reanimation, Bozyaka Training and Research Hospital, İzmir, Turkey**

**BACKGROUND**
Percutaneous dilatational tracheostomy (PDT) is indicated when prolonged mechanical ventilation is required. Although tracheostomy has only been applied by surgical techniques in the recent past, it is currently applied using PDT techniques. PDT is performed in a short time; it is a simple technique with a low complication rate and a smaller skin incision, and it can be performed at the patient's bedside. Elderly individuals comprise an increasing proportion of the population and represent a progressively expanding number of patients admitted to the intensive care unit (ICU) who require prolonged mechanical ventilation; thus, the number of tracheotomy procedures is ultimately increasing. In this study, we aimed to present our PDT practices in the elderly in our ICU.

**MATERIAL and METHODS**
After obtaining ethics committee approval, we conducted a retrospective chart review of 47 geriatric patients in the ICU who underwent PDT by an anaesthesiologist.

**RESULTS**
Eighteen patients died (38%) during hospitalization in the general ICU (of causes unrelated to PDT). Sixteen patients were successfully weaned from mechanical ventilation following PDT. The mean time interval from PDT to weaning from mechanical ventilation was 9.56±6.35 days (range: 1–23 days). Fourteen patients were discharged from the general ICU with tracheostomy cannulae, and five patients were discharged with household ventilators. The mean time interval from PDT to discharge from ICU was 24.00±11.86 days (range 5–45 days).

**CONCLUSION**
The Griggs technique for PDT appears to be safe when performed by anesthesiologists or intensive care physicians. It can be performed easily at the patient's bedside; thus, the transport of critically ill patients, especially geriatric patients, to the operating room can be averted.

**Keywords:** Percutaneous tracheostomy, intensive care, geriatric

## INTRODUCTION

Percutaneous dilatational tracheostomy (PDT) is indicated when prolonged mechanical ventilation is required (1-6). The ratio is approximately 10%–24% in intensive care unit (ICU) patients (2).

This procedure is performed to facilitate weaning from mechanical ventilators; reduce infectious complications; promote comfort, oral feeding, and speech in selected patients; reduce complications due to prolonged endotracheal intubation; reduce the volume of dead space; facilitate cleaning of pulmonary secretions; increase compliance; provide more effective alveolar ventilation; and reduce the length of stay in intensive care (1-3, 5-7).

Although PDT has several potential benefits, it can also have many significant complications with high mortalities, such as insertion around the trachea, laceration, tearing of the trachea and esophagus, pneumothorax, and pneumomediastinum (2, 5).

Surgical tracheostomy (SCT) was first described by Jackson in 1909 (4, 5). In 1955, Shelden et al. were the first to describe percutaneous dilatational tracheostomy through the skin as a simple alternative to the surgical technique; however, this method was not welcomed by ICU specialists (4, 5, 8). In 1969, Toy and Weinstein introduced the use of a guide wire for the dilator and cannula (4). In 1985, Ciaglia described the method of percutaneous dilatational tracheostomy, which was widely accepted and increasingly performed at the patient's bedside by Otolaryngologist eye, nose, and throat doctors or other surgeons (5, 9).

Although tracheostomy was only surgically applied in the recent past, it is currently applied using PDT techniques (1, 2, 6). PDT can be performed in a short time; it is a simple technique, the complication rate is low (1, 5, 6), the skin incision is smaller, and it can be performed at the patient's bedside (2, 5, 6). The patient remains on a ventilator for most of the time,

**Correspondence Author:**
Fulya Yılmaz Duran E-mail: drfulya@mynet.com

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and there is no need to transport the patient to the operating room (6).

Elderly individuals comprise an increasing proportion of the population; mild illness can lead to rapid deterioration of the general condition of these patients, and they represent a progressively expanding number of patients admitted to the ICU who require prolonged mechanical ventilation. Thus, the use of tracheotomy procedures is ultimately increasing (10, 11). Ventilator-associated pneumonia (VAP) is a common problem in patients on long-term mechanical ventilation in the ICU. The risk factors are age greater than 60 years, multiple intubations, and even the tracheotomy itself. VAP incidence decreases when tracheotomies are performed earlier (11). All the components of the respiratory system are affected by aging, although at different rates; however, age in itself is not a risk factor of respiratory failure (12). In this study, we aimed to present our PDT practices in the elderly in our ICU.

## MATERIALS and METHODS

After approval of the ethics committee of the university, we conducted a retrospective chart review of 47 geriatric patients in the ICU who underwent PDT by an anaesthesiologist between September 2015 and March 2015. In our ICU, before we perform PDT, informed consent is obtained from the person responsible for the patient. Demographic data, indications for admission to the general ICU, the timing of PDT, weaning from mechanical ventilation, and discharge from the ICU were collected from these records. There were no exclusion criteria.

After clinical and laboratory evaluation, the patients were positioned on their beds under close monitoring by electrocardiogram, non-invasive blood pressure, pulse oximetry, and capnography.

The procedure was performed with an orotracheal tube in place under sedoanalgesia and muscle relaxation, with administration of 100% oxygen throughout. Under sterile conditions, anatomic markers of the trachea were detected and the tracheostomy was performed with the Griggs guide wire dilating forceps technique using a Portex percutaneous tracheostomy kit.

Then, extubation was performed and mechanical ventilation was continued through the tracheostomy. A plain chest X-ray was routinely performed after PDT. Statistical analyses were performed using THE Statistical Package for the Social Sciences (SPSS) (Statistical Package for the Social Sciences) (SPSS for Windows, Version 16.0; Chicago, IL, USA) 16.00. Descriptive statistics and frequency distributions were calculated for specific variables. Data are presented as mean±standard deviation (SD), number of patients, or median (range) where appropriate.

## RESULTS

We evaluated the data of 47 geriatric patients retrospectively. The demographic characteristics of the patients are presented in Table I.

Ventilation modes during the application of PDT were adaptive support ventilation (ASV) in 92% of patients, synchronized intermittent mandatory ventilation (SIMV) in 4% of patients, and synchronized controlled mechanical ventilation (S-CMV) in 4% of patients.

**TABLE I.** Demographic characteristics of the patients

| | |
|---|---|
| Age (years), mean (SD) | 73.61±9.91 |
| Male (n)/Female (n) | 21/26 |
| APACHE II score, mean (SD) | 24.68±6.44 |
| Days ventilated prior to PDT, mean (SD), (min-max) | 10.95±7.39 days (range 3–31 days) |
| Time interval from PDT to weaned from mechanical ventilation, mean (SD), (min-max) | 9.56±6.35 days (range 1–23 days) |
| Time interval from PDT to discharge from ICU, mean (SD), (min-max) | 24.00±11.86 days (range 5–45 days) |
| Indication for tracheostomy (n) | Respiratory failure (n=30) |
| | Cardiac arrest (n=13) |
| | Subarachnoid hemorrhage (n=4) |

SD: standart deviation; PDT: percutaneous dilatational tracheostomy; ICU: intensive care unit; min: minimum; max: maximum

Eighteen patients died (38%) during hospitalization in the general ICU (of causes unrelated to PDT). Sixteen patients were successfully weaned from mechanical ventilation following PDT. Fourteen patients were discharged from the general ICU with tracheostomy cannulae, and five patients were discharged with household ventilators. Ten patients were still being treated by mechanical ventilation in the ICU.

No complications (surgical exploration due to bleeding, subcutaneous emphysema, infection of the stoma site) were seen after PDT. Minor bleeding as an early complication occurred in one patient.

## DISCUSSION

In this study, we aimed to present our PDT practices in the elderly in our ICU. Recently by the advancing at age of population, admissions of geriatric patients to ICU increasing. And long intubation periods is necesseray at these group of patients (1, 5). Recently, with the advancing age of the population, geriatric patient admissions to intensive care are increasing; long intubation periods are indicated for many of these patients (1, 5).

The PDT method has recently become a method commonly used in ICUs (1, 9).

To date, different percutaneous tracheostomy methods have been described. (2, 8, 9)

1. Multi dilation method (Ciaglia technique)
2. One-step method of dilation (Ciaglia Blue Rhino)
3. Forceps dilation technique (Griggs)
4. Fantoni translaryngeal method
5. Controlled rotation method (PercuTwist)

Currently, the most commonly used techniques are the methods described by Ciaglia and Griggs (8).

Earlier studies mostly compared surgical tracheostomy methods with percutaneous tracheostomy. However, there are few studies comparing PDT techniques.

Despite the increasing rate of tracheostomy in the ICU, selection of the technique is still controversial. The surgical tracheostomy method is preferred in France, whereas in England, bedside tracheostomy is implemented by anesthesiologists in 90% of patients (9). Other important issues are who should perform this procedure (4) and when to perform this procedure (8, 11).

Many studies that compared PDT with surgical tracheostomy reported that PDT is safe and advantageous in terms of cost (9). Düger et al. (3) reported that PDT, in terms of postoperative complications and bleeding, gives better results than surgical tracheostomy (SCT) and can be used widely as a routine method for elective tracheostomy in ICUs. Hasanloei et al. (5) showed a statistically significant difference between the PDT and SCT methods in terms of the duration of the tracheostomy procedure, the duration of mechanical ventilation, and the expense of the procedure. Also, Yeniaras et al. (9) reported that the cost decreases by approximately 39% when tracheostomy is performed by PDT techniques at the patient's bedside compared to surgical tracheostomy.

In an organized meta-analysis of PDT and SCT by Delaney et al. (13), PDT was reported to be associated with less wound infection, bleeding, and mortality compared to SCT. Satio et al. (14) found that PDT patients had obviously less scar malformation and less wound and stoma infection; also, the duration of the procedure was shorter. Türkmen et al. (15) investigated the complications of PDT and SCT by control MRI 1 month after closure of the tracheostomy in 30 critical patients. They concluded that PDT appears to be safer and more effective than SCT.

We perform percutaneous tracheostomy on all elderly patients in our ICU. We plan to use surgical tracheostomy in patients with anatomic abnormalities; however, we have not encountered such anatomic abnormalities. All tracheostomies were applied using the Griggs technique at the patient's bedside by anesthesiologists in our ICU. The Griggs technique is preferred because of its short application time (5.5 min); also, we have more experience with the Griggs method than with other methods.

In some studies, only surgeons performed PT, whereas in other studies, it was performed by anesthesiologists and intensive care physicians. The advantage of having anesthesiologists or intensive care physicians perform tracheostomies is that the procedure can be performed without delay (4). Klein et al. (4) reported that the Griggs technique for PDT appears to be a safe and effective modality in the hands of intensive care physicians. In addition, when intensive care physicians perform PDT, delays relating to surgeons or operating rooms are no longer a problem.

Akıncı et al. (16) compared the Ciaglia and Griggs methods for PDT in their study. They reported that the Griggs method requires less manipulation, has a more comfortable application, and has a significantly shorter processing time.

The debate on when to apply tracheostomy in the ICU is still ongoing. Early tracheostomy is the time when tracheostomy is applied between the second and tenth days that the patient is ventilated with mechanical ventilation after being admitted to the ICU (7).

Early tracheostomy application improves patient comfort, improves communication with the patient, and increases the patient's oral intake (8). Griffiths et al. (17) reported that early tracheostomy application in ICU patients reduces the rate of hospitalization. Schneider et al. (11) suggested that elderly patients benefit from an earlier tracheostomy, resulting in a decreased incidence of VAP and a shorter admission time.

In our ICU, if we plan to perform a tracheostomy, we seek to apply it within the first 10 days that the patient is on mechanical ventilation. We prefer early PDT to prevent VAP; facilitate weaning from the mechanical ventilator; promote the patient's comfort, oral feeding, and speech; and in selected patients, reduce the length of stay in intensive care.

Although PDT has advantages, it is an invasive procedure that has early and late complications (1). The early complication rate of PDT applied by the Griggs method ranges from 9.7% to 15% (6). Elective tracheotomy performed by experienced practitioners has a lower complication rate (3). We observed minimal bleeding in one case during our PDT applications.

The importance of the size of the tube was highlighted in 1971 by Andrews and Pearson. They observed a significant relationship between the diameter of the tracheostomy tube and the incidence of stricture. The percutaneous technique offers the smallest possible tube (and stoma) consistent with adequate air flow and suctioning ability (6). We use tracheostomy cannula number 8 in men and number 7 in women.

The potential limitations of this study are that ultrasound or bronchoscopy was not performed before the tracheal puncture. We use a landmark technique in which most anaesthesiologists have significantly more experience than ultrasound.

## CONCLUSION

The Griggs technique for PDT appears to be safe when performed by anesthesiologists or intensive care physicians. It can be performed easily at the patient's bedside; thus, the transport of critically ill patients, especially geriatric patients, to the operating room can be averted.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the ethics committee of Katip Çelebi University Atatürk Training and Research Hospital, İzmir, Turkey.

**Informed Consent:** Informed consent was not received due to the retrospective nature of the study.

**Peer-review:** Externally peer-reviewed.

**Author contributions:** Concept - F.Y.D., D.A.; Design - F.Y.D., D.A.; Supervision - F.Y.D.; Resource - F.Y.D.; Materials - F.Y.D., D.A.; Data Collection &/or Processing - F.Y.D., D.A.; Analysis &/or Interpretation - F.Y.D.; Literature Search - F.Y.D.; Writing - F.Y.D.; Critical Reviews - F.Y.D.

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Case Report

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# Esophagus Perforation Caused by a Foreign Body

**Turan Acar[1], Nihan Acar[1], Özgür Yıldırım[1], Firdevs Topal[2], Mehmet Hacıyanlı[1]**

**[1]Department of General Surgery, İzmir Katip Çelebi University Atatürk Training and Research Hospital, İzmir, Turkey**
**[2]Department of Gastroenterology, İzmir Katip Çelebi University Atatürk Training and Research Hospital, İzmir, Turkey**

Esophagus perforation caused by a foreign body is a rare condition. Management of these cases is quite challenging. Although diagnostic techniques, antibiotics, and surgical procedures have highly developed in recent years, morbidity and mortality rates are still high. In this article, we aimed to present our treatment management for a patient with esophageal perforation caused by a chicken bone. A 61-year-old male patient was admitted to the emergency department with sudden dyspnea and chest pain, which occurred while having dinner. Laboratory tests were normal, except for the presence of leukocytosis. Chest X-rays showed the elevation of the left hemidiaphragm and mediastinal air. As the endotracheal examination was normal, esophageal perforation was considered in the patient. Emergency endoscopy was performed in the patient. A chicken bone was found in the middle part of the esophagus lumen. The chicken bone was removed using a basket, and the perforation area was closed with endoscopic clips. Endoscopic interventions have an important role in the diagnosis and treatment of esophageal perforations.

**Keywords:** Endoscopy, esophagus, perforation, foreign body, clips

## INTRODUCTION

Esophageal perforation is a vital and urgent condition with high morbidity and mortality rates (1). Approximately 70% of the cases present esophageal perforation following a diagnostic or therapeutic intervention. Esophageal perforation caused by a foreign body is very rare (8%). Management of these cases is quite challenging. Although diagnostic techniques, antibiotics, and surgical procedures have highly developed in recent years, the morbidity and mortality rates are still high. In this article, we aimed to present our treatment management for a patient with esophageal perforation caused by a chicken bone.

## CASE PRESENTATION

A 61-year-old male patient was admitted to the emergency department with sudden dyspnea and chest pain, which occurred while having dinner. He had a medical history of hypertension and coronary artery disease. He was taking an antihypertensive drug and acetylsalicylic acid (aspirin 100 mg) for these conditions. Abdominal examination was normal, and decreased breath sounds were noted during auscultation. Laboratory tests were normal, except for the presence of leukocytosis (22.14 K/uL). Chest X-rays showed an elevation of the left hemidiaphragm and mediastinal air. Upon these findings, a thoracic computed tomography (CT) scan was performed and showed diffuse mediastinal air (Figure 1). Fluoroscopic examination with a water-soluble contrast could not be sufficient for a clear diagnosis. As the endotracheal examination was normal, esophageal perforation was considered. Emergency endoscopy was performed on patients. A chicken bone was found in the lumen of the middle part of the esophagus. The chicken bone was removed using a basket, and the perforation area was closed with three endoscopic clips (Boston Resolution Clip, Boston Scientific; Natick, Massachusets, USA). After the procedure, because of a sudden decrease in oxygen saturation, the patient was intubated and had been hospitalized in the intensive care unit. A broad-spectrum antibiotic was initiated for mediastinitis (Tazocin 4.5 g intravenous flacon (Piperacillin Sodium+Tazobactam Sodium), Pfizer; Berkshire, United Kingdom). The patient stayed for 12 days in the intensive care unit and 4 days in the general surgery ward. Control thoracic CT showed that the endoscopic clips were in the right place and the mediastinal air was resorbed (Figure 2). The patient was discharged from hospital after recovery. He has been followed up for 24 months and does not have any complaint.

Informed consent was obtained from both patients. Consents were also obtained to conduct scientific studies.

## DISCUSSION

Esophageal perforations are usually iatrogenic, spontaneous, traumatic, or secondary to neoplasms. Most of the cases in the literature have been reported as secondary to endoscopic procedures. In the literature, there are very few articles about esophageal perforation caused by a foreign body.

**Correspondence Author:**
Turan Acar E-mail: drturanacar1982@gmail.com

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**FIGURE I.** Diffuse mediastinal air (marked with circle)

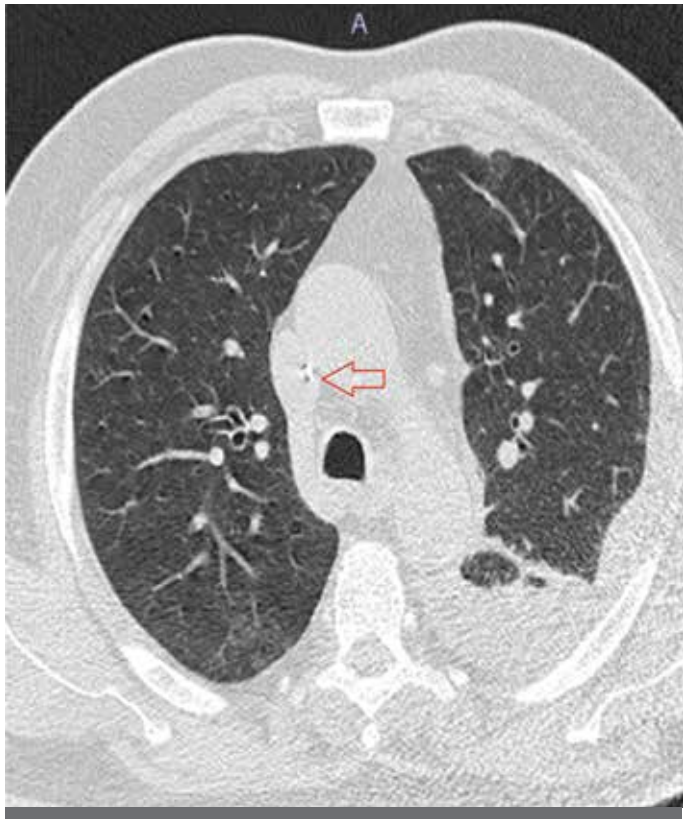

**FIGURE 2.** The mediastinal air was resorbed (marked with circle)

Because of the proximity to vital organs and severe bleeding tendency, the mortality rate is approximately 65% when the esophagus is perforated. A significant experience is required because of the difficulties in diagnosis and insidious progress of symptoms. In case of a possible delay, the mortality rate increases further (2).

The occurrence of the earliest symptoms varies depending on the time of perforation, size, location, and contamination. Chest pain is the most common symptom. Less often, patients may present with dysphagia and dyspnea. Our patient also had a diffuse chest pain.

Various diagnostic tests may be used for confirmation of the diagnosis. First, chest X-rays and then CT scans show mediastinal air (3). Additionally, endoscopic or fluoroscopic examinations with water-soluble contrast agents are frequently used. There is a risk of injury and contamination in endoscopy. In addition, because of the possibility of missing the small perforation areas, it is not highly recommended (4). However, in patients with delayed and diffuse mediastinitis, high morbidity and mortality rates of open surgery should be considered. Diagnosis and also treatment with endoscopy can be easily performed in these patients.

Our patient had a diffuse mediastinitis at the time of admission to the hospital. When endoscopy was performed after CT scans, the bone, which stuck in and perforated the esophagus, was extracted, and the perforation area was successfully repaired with clips.

There is no consensus on the surgical treatment options in the literature. The treatment approach may vary depending on presence of sepsis and the location and size of the lesion (5, 6). The key to the optimum management is early diagnosis and the level of injury. The most favorable outcome is obtained following the primary closure of the perforation within 24 h, resulting in 80%–90% survival. These rates are more about the injuries at the cardioesophageal level, which have been assessed by an abdominal approach. A probable thoracotomy increases both morbidity and mortality rates. Therefore, it is necessary to choose the procedures that are as minimally invasive as possible.

In some selected cases, if there is no perforation to the pleural cavity, non-operative (conservative) treatment can be preferred. Conservative treatment selection requires good decision-making skills and a careful radiological examination.

Esophageal foreign bodies are safely removed by endoscopic procedures. If perforation is detected, repair with clips or placing an eluting stent may be attempted simultaneously. We believe that with a proper management, the morbidity and mortality rates will be significantly reduced.

**Informed Consent:** Written informed consent was obtained from patient who participated in this study.

**Peer-review:** Externallypeer-reviewed.

**Author contributions:** Concept - T.A., N.A.; Design - T.A., N.A., M.H.; Supervision - M.H.; Resource - F.T., M.H.; Materials - T.A., Ö.Y., F.T.; Data Collection &/or Processing - T.A., Ö.Y.; Analysis &/or Interpretation - T.A., F.T.; Literature Search - T.A., M.H.; Writing - T.A., N.A.; Critical Reviews - M.H., F.T.

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# Thymoma with Sacral Metastasis

**Sedat Altay[1], Berna Dirim Mete[1], Canan Altay[2], Merve Gürsoy[1], Hasan Kamil Sucu[3], Arzu Avcı[3]**

[1]**Department of Radiology, İzmir Katip Çelebi University Atatürk Research and Training Hospital, İzmir, Turkey**
[2]**Department of Radiology, Dokuz Eylül University School of Medicine, İzmir, Turkey**
[3]**Department of Neurosurgery, İzmir Katip Çelebi University Atatürk Research and Training Hospital, İzmir, Turkey**

Thymomas are the most common type of mass found in adult anterior mediastinal masses. Thymomas typically metastasize to the ribcage because of their slow growth and affinity for local invasion. Far metastases are rare, with the brain as the most commonly metastasized area. Bone metastases of thymomas are usually observed in the calvarium. A 60-year-old patient, who presented with metastatic mass lesions that developed 18 months after undergoing a surgery for mediastinal thymomas in the sacrum and iliac bones detected by computed tomography, magnetic resonance imaging, and histopathology, is the first mediastinal thymoma case with metastasis to the sacrum in the literature.

**Keywords:** Thymoma, malingnant thymoma, extrathoracic thymoma metastasis, sacrum metastasis

## INTRODUCTION

Thymomas, which arise from the epithelial cells of the thymus, are usually localized in the anterior mediastinum. The frequent asymptomatic cases are diagnosed from bilateral lung X-rays as masses in the anterior mediastinum area. Computed tomography (CT) and magnetic resonance imaging (MRI) are important in the differential diagnosis. Ectopic thymomas can be found outside of the anterior mediastinum in the head–neck and thorax areas. The most commonly observed symptoms in patients are neurological paraneoplastic syndromes. In patients with thymomas, additional immune system diseases such as myasthenia gravis can be diagnosed. The prognosis of thymomas is dependent on capsule morphology. The treatment includes wide and complete surgical resection. Far organ metastases of thymomas are very rare (1-3). Metastases in the brain and calvarial bones have been reported in previous studies (4). However, no case report concerning sacral and iliac bone metastases of thymomas has been published previously. In our case report, we present such a case with CT, MRI, and histopathology results.

## CASE PRESENTATION

A 60-year-old female patient presented to our hospital with pain in the lower back and pelvic area. After diagnosing a mass by chest X-rays, a biopsy was performed. The mass was diagnosed as thymoma by histopathology, and the patient was treated surgically. The surgically excised mass was 6 cm in diameter. The pathological diagnosis was Type B-3 epithelial thymoma with positive capsule invasion. Invasion into the visceral pleura was detected. No vascular or pericardial invasion was found. A lumbar CT was performed 18 months after surgery for the patient's lower back pain. Multi-detector CT (Toshiba 64-slice CT; Tokyo, Japan) directed to the lumbar vertebras. No disc pathologies were detected. A lytic expansile lesion that caused cortical thinning in the anterior sacrum with accompanying sclerosis in the sacrum and iliac bones was diagnosed by CT. To define the morphology and direction of the mass, contrast MRI of the sacrum and iliac bones was planned. A routine contrast MRI for pelvic bones was performed. The scans were obtained using a 1.5-Tesla Signa MR unit (General Electric Medical Systems; Milwaukee, WI) in a neutral position (supine). Standard sequences were obtained for all the pelvic MRI scans, which included sagittal and axial fast-spin-echo T2-weighted images and sagittal fast-spin-echo T1-weighted images. Postcontrast sequences included sagittal and axial fat-suppressed fast-spin-echo T1-weighted MR images and axial fast-spin-echo T1-weighted images.

A primary sclerotic heterogeneous lesion in the right sacral bone was detected on axial CT images. Focal hypodense areas were observed in the lesion, and sclerotic areas were detected in the left iliac bone (Figure 1a). A soft tissue component was noted anterior to the right sacral bone lesion. The soft tissue component was hypodense on the soft tissue window axial CT image (Figure 1b).

A heterogeneous pathological signal was detected in the right sacral wing on T2-weighted MRI. Some sclerotic regions were observed in this bone as low signal intensity on both T1- and T2-weighted MRI (Figure 2a, b). A soft tissue compo-

**Correspondence Author:**
Sedat Altay E-mail: sedataltay@yahoo.com

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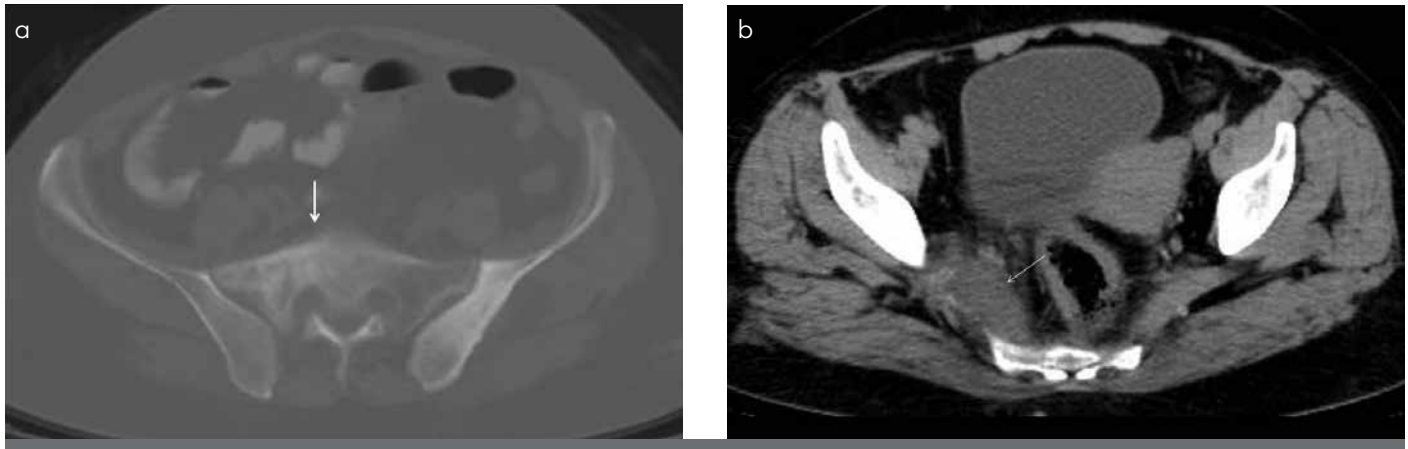


**FIGURE I. a, b.** (a) Axial pelvic CT image mainly shows the sclerotic heterogeneus lesion (arrow) in the right sacral bone. Focal hypodens areas are seen in the lesion. Sclerotic areas are also seen in the left iliac bone. (b) Axial pelvic CT image shows the soft tissue component of the lesion (arrow).

**TABLE I.** Thymoma classifications

| WHO | Levine ve Rassai | Müller et al. (8) |
|---|---|---|
| A | Benign thymoma | Medullary thymoma |
| AB | | Mixed thymoma |
| BI | Malignant thymoma category I | Predominantly cortical thymoma |
| B2 | | Cortical thymoma |
| B3 | | Well-differentiated thymic carcinoma |
| C | Malignant thymoma category 2 | Carcinoma |

WHO: The World Health Organization

nent was observed at the anterior region of the sacral lesion. Postcontrast images revealed heterogeneous enhancement in the bone and soft tissue component (Figure 2c).

A bone biopsy of the sacral bone and surrounding solid area was performed at the Neurosurgery Department using CT. The procedure was performed without complications. Epithelial metastatic cells were observed in the biopsy results. Histopathology confirmed the origin of the lesion to be thymoma metastasis. In accordance with the oncological council, radiotherapy was performed on the patient. The informent consent was obtained from our patient. Radiotherapy ameliorated the pain experienced by the patient.

## DISCUSSION

The thymus is derived embryologically from the endodermal epithelium of the third pharyngeal pouches, which migrate medially and downward into the anterior superior mediastinum (5). The normal thymus is rich in lymphocytes and epithelial cells. Hassall's corpuscles are characteristic for the thymus. Thymomas are composed of neoplastic thymic epithelial cells and are usually located in the anterior mediastinum. Thymomas are rare tumors that grow slowly and are defined as benign neoplasms. Thymomas can be observed with paraneoplastic and autoimmune syndromes (e.g., myasthenia gravis, polymyositis, systemic lupus erythematosus, and rheumatoid arthritis) (6). Thymomas are most frequently associated with myasthenia gravis, which is an autoimmune disease. The frequency of myasthenia gravis occurrence has been reported to be 30%–60%, which is high (3). No family or ethnic factor has been associated with the etiology of thymomas (7). In some studies, the Epstein–Barr virus nuclear antigen was found in thymic carcinoma cells, warranting further research in that area (6).

Thymoma staging and prognostic factors are important for treatment planning. The World Health Organization (WHO) released a thymoma classification in 1999. Thymomas are classified as Type A, AB, BI-3, and C (Table I) (8). According to the WHO classification, pathologically capsular invasive thymomas are classified as malignant (9). Additionally, malignant thymomas are classified as Type C and are termed thymic carcinomas (9, 10). Levine and Rosai (11) classified thymomas as benign and malignant and malignant thymomas are classified as Category I or 2 (Table I).

In the Masaoka-Koga classification, thymomas are divided into four stages. Stage I thymoma has no transcapsular invasion, whereas stage 2 thymoma has transcapsular invasion. Limited microscopic invasion is classified as Stage 2a, and invasion into neighboring fatty tissues is classified as stage 2b. If there is suspicion concerning the tumor penetrating into the mediastinal pleura or pericardium, thymoma should be classified as stage 3. If the primary tumor has separate pleural or pericardial nodules, it is classified as stage 4a. The involvement of nodes to the thymus is stage 4b. Involved nodules can be mediastinal or distant nodules (12).

Malignant thymomas account for ~7%–35% of all thymomas (13, 14). Local invasion and recurrence can occur in cases of malignant thymomas. Very rarely, distant metastases can develop. The series of 1093 cases by Kondo et al. (15) is the largest thymoma series in the literature. In that study, less than 2% of thymomas exhibited lymph node metastasis, and distant metastases were reported in less than 1% of the cases. Kondo et al. (15) reported the lung and thorax as the most common sites of distant metastases.

In thymoma treatment, the anterior mediastinal mass should be completely surgically removed. Studies of thymoma report complete surgical resection and stage as the most important prognostic factors (16). The Masaoka-Koga classification suggests surgical treatment for stages I and 2 and chemotherapy for stages 3 and 4 (15). Main artery invasion is also reported to be an important prognostic factor. Mediastinal radiotherapy is not

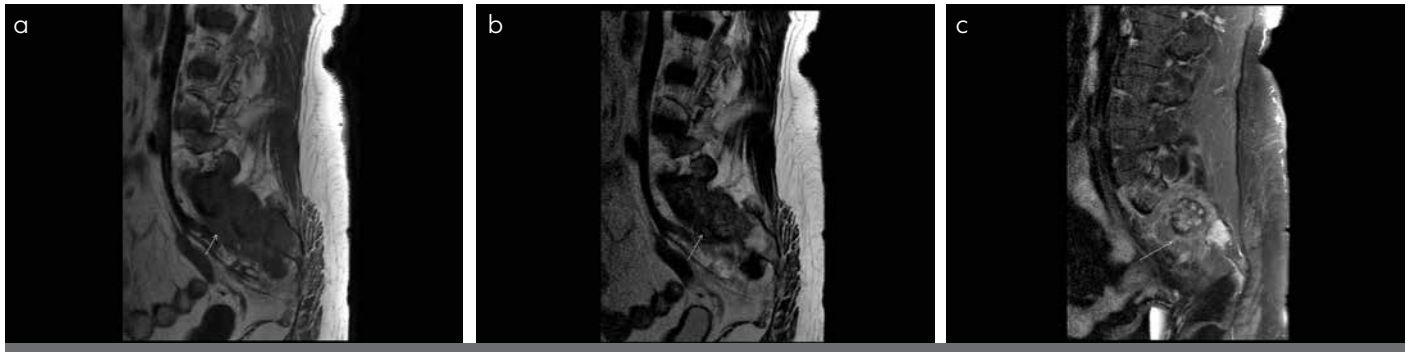


**FIGURE 2. a-c.** Sagittal FSE T1-weighted (a), FSE T2 sagittal (b), and postcontrast fat-suppressed FSE T1 sagittal (c) images show the soft tissue component of the lesion just anterior to the sacral vertebras (arrows). This tissue enhances heterogeneously (c). The metastatic lesion in the sacral bone is seen as low signal intensity on the T1-weighted image and heterogenic signal intensity on the T2-weighted image (b).

employed before or after surgery because of its cardiac complications; chemotherapy is preferred in such patients. In extrathoracic thymoma metastases, radiotherapy is used because thymomas respond to radiotherapy fairly rapidly (1, 17, 18). Local recurrence can occur after surgery. In some cases, however, the mass cannot be completely surgically removed (2). In such cases, cisplatin chemotherapy protocols are used (2, 12).

Thymomas rarely metastasize (2%), and they most commonly metastasize to the lungs and brain (1, 2, 16). Extrathoracic metastases of thymomas are extremely rare; in such cases, cranial metastases are observed most frequently. In the literature, a few cases of metastases outside of the cranium have been reported. In diagnosed metastatic cases, masses with heterogeneous hemorrhagic areas were defined. Additionally, in some cases, thymomas metastasized into the vertebral extraspinal area (3), peritoneal cavity (13), and pelvic and genital organs (14).

Bone metastases of thymomas are very rare. In those few cases, the metastasized area is usually the cranium bones. No published report exists concerning thymomas metastasizing into the sacrum and iliac bones. Our case is the first of thymoma metastasis to the sacrum and iliac bones 18 months after the surgical resection of mediastinal thymomas. Our patient had poor prognosis, and she died 2 years after the diagnosis of sacrum metastasis because of multiple organ failure. In the literature, thymoma bone metastases are reported as lytic expansile bone lesions (14). In our case, the lesion observed in the sacrum had a lytic area and a component that caused deformation of the bone cortex as well as growth towards anterior soft tissues (Figure 1, 2). Additionally, CT showed that part of the lesion was sclerotic in nature, which has not been reported previously in bone metastases of thymomas.

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CYPRUS JOURNAL OF MEDICAL SCIENCES

Case Report

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# Red Poppy (Papaver Rhoeas) Poisoning: A Report of Three Cases

**Sedat Koçak[1], Keziban Karabulut[2], Birsen Ertekin[3], Himmet Nak[1], Başar Cander[1]**

[1]Department of Emergency Medicine, Necmettin Erbakan University Meram School of Medicine, Konya, Turkey
[2]Department of Emergency Medicine, Başkent University School of Medicine, Konya, Turkey
[3]Department of Emergency Medicine, Beyhekim State Hospital, Konya, Turkey

Red poppy (RP) is a plant that can be widely found in our country. It is known as a medicinal plant among the people. Three cases in which central nervous system (CNS) symptoms developed after eating RP have been presented. Case I: A 29-year-old female patient was admitted to our clinic with complaints of nausea, vomiting, and convulsions after approximately 1.5–2 h of eating RP. She was apathetic and non-cooperative, and the vital findings were in normal ranges. Pin-point pupils were noted. The patient had tonic seizure once. Case 2: A 9-year-old female patient, daughter of case I, was brought with her mother with complaints of spasm of the jaw, altered mental status, and convulsion. Agitations started 1 h later after admission. She experienced a generalized tonic-clonic seizure that continued for 5 min. Case 3: A 70-year-old female patient was brought to our clinic with mental status changes 1 hour after she had ingested RP. She was lethargic, disoriented, non-cooperative, and the pupils were miotic. An unconscious consumption of weasel grass causes negative effects, particularly effects on CNS. Because generalized seizure was only observed in the child, it was suggested that children experience more effects. The mental status of these patients was restored within approximately 6 h, and they were discharged. Mortality or morbidity was not observed in these cases. Nevertheless, this does not indicate that it would not cause worse clinical results. To prevent the ignorant consumption of RP and similar weeds, educational and informational activities must be conducted at the public level.

**Keywords:** Red poppy, seizure, emergency medicine, intoxication

## INTRODUCTION

"Herbal treatments" are no longer solely used in developing countries; they are also becoming important in developed countries. In the year 1990, herbal medications comprised 3% of the drug market, and this market was worth 2.4 million dollars. The annual growth of this market was reported to be 1.5%. Herbal medicines are used for different reasons with different priorities in various countries. However, they are generally used to treat stomach diseases, kidney and urinary tract diseases, lung diseases, and coughs, and they are also used as narcotics or sedatives (1). Besides beneficial herbs, many harmful plants also grow in our country.

The poppy (Rp) belongs to the poppy family (Papaver rhoeas) and is accepted by the public as a healing herb. As it sets an example for the dangers of consuming wild weeds, we aimed to present three cases in which side effects developed in the central nervous system (CNS) after ingesting poppy weeds.

## CASE PRESENTATION

### Case 1

A 29-year-old female patient presented to our emergency service with nausea, vomiting, and analtered mental status approximately 90 min after eating the poppy weed which she had gathered from a garden for dinner. The physical examination was unremarkable. Intravenous fluid therapy was administered. She became agitated 25 min after admission to the ED, and 10 mg of diazepam (DEVA Holding Company; İstanbul, Turkey) was administrated intravenously. Computed tomography (CT) scans and laboratory examinations revealed no findings. Following the recommendation of the neurology clinic, the patient was transferred to the emergency intensive care unit for observation of the pupils, the mental status, and the development of seizures. Only intravenous fluid (NaCl 0.9%) (Eczacıbaşı-Baxter Company; İstanbul, Turkey) was administered to the patient during the observation period. Her pupils turned back to normal, and she regained her consciousness within approximately 6 h. The patient's complaints disappeared, and she was hemodynamically stable and was discharged 24 h later with normal vital signs. Patient consent form were taken from her relatives.

### Case 2

A 9-year-old girl was brought to the pediatric emergency service with a headache, dizziness, locked jaw, and contractions that had lasted for approximately 15 min. She was the daughter of Case I, and she had consumed the poppy weed with

This study was presented as a poster at the International Symposium on Emergency Medicine, 13-15 April 2012, Baku, Azerbaijan.

**Correspondence Author:**
Birsen Ertekin E-mail: biceacil@hotmail.com

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her mother. At admission, the patient's physical examination, her mental status, and other system findings were normal, and her pupils were miotic. Intravenous fluid therapy was administrated. Following the recommendation of the Drug and Poison Information Center consultant, gastric lavage was performed and active charcoal (I g/kg) (Orfoz Health Care Company; Ankara, Turkey) was administered. One hour into her observation, she became agitated and had a generalized tonic-clonic seizure that lasted for 5 min. Diazepam (I0 mg) was administered intravenously, and she was admitted to the pediatric intensive care unit for observation of the pupils, mental status, and development of seizures. No focal or generalized seizure was observed during the follow-up period of the patient in the emergency observation unit. The patient's vital signs and repeated systemic examination findings were stable, and she was discharged 24 h later. Patient consent form were taken from her relatives.

**Case 3**

A 70-year-old female patient was brought to the emergency service with clouded consciousness I h after she had ingested poppy weed, believing that it would stop her cough. She was lethargic, disoriented, and non-cooperative, and her pupils were miotic. No lateralizing neurological symptoms were present. The physical examination was normal. After the recommendations of the Drug and Poison Information Center consultant were considered, gastric lavage was performed and active charcoal (I g/kg) was administered. The brain CT and biochemical parameters were normal. She was transferred to an intensive care unit for the intravenous fluid therapy and observation. The patient regained her consciousness within approximately 6 h. The patient's vital signs were stable during the 24-h observation period, and she was discharged after recovery. Patient consent form were taken from her relatives.

## DISCUSSION

Many plants cause potentially lethal local and systemic side effects (2). Exposure to toxic plants is the fourth most common cause of poisoning in the United States of America (USA). The hospitalization rate for toxic plant exposure is 0.04%, and death is very rare (0.00I%). The incidence of plant poisoning has been reported as 6% in our country, and it is mostly common in children between the ages of 2 and II years who live in suburban areas. Adults may also suffer poisoning after accidentally ingesting poisonous plants. Because the amount ingested is higher in these cases, the poisoning is more severe. Abusive use of plants for their euphoric effects may also lead to toxic clinical conditions. It has been reported that there are approximately 20 types of poisonous plants in our country (3).

The poppy weed grows nearly everywhere in the world, usually in crop fields, pastures, lawns, and roadsides. It is believed that it was first seen in Turkey or Bulgaria, and it is known that it was used by ancient Egyptians, Greeks, and Romans. The leaves are segmented, the flowers are red, and the deep portions of the petals may or may not have black spots (Figure I). It is a common species in Anatolia and contains alkaloids. The portions of the weed above the soil and the fruit capsules contain rhoeadin alkaloid and small amounts of morphine (4). The flower petals are gathered in the flowering season (May–June). It is commonly used to treat asthma, to lower cholesterol levels, and as to provide relief from cough. Pedanius Dioscorides mentioned

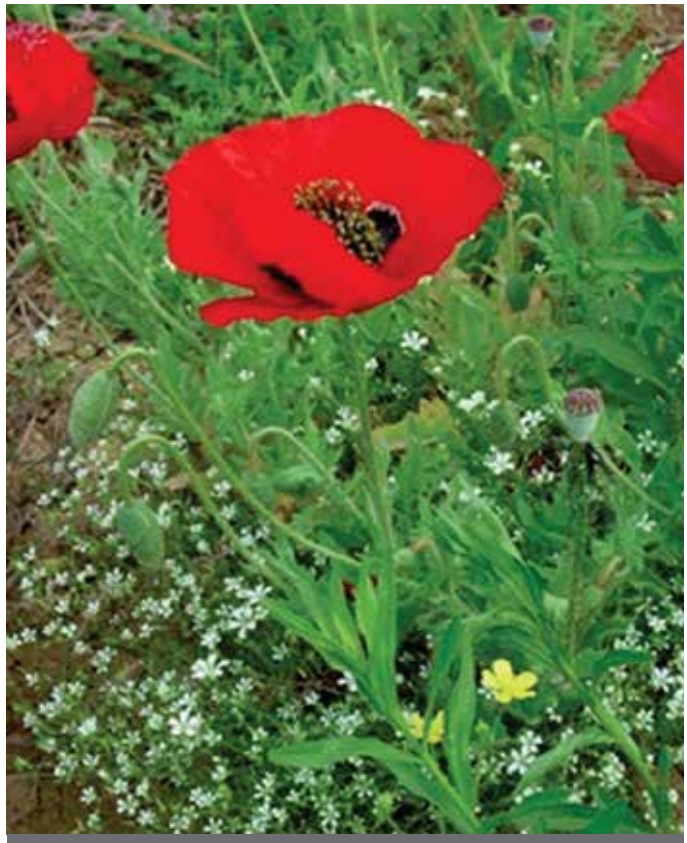

**FIGURE I.** Papaver rhoeas (poppy weed)

that poppy seeds have sedative features when consumed with wine. The leaves are used with the flower heads against infections (5). It has a narcotic and mild sedative effect. It is used as a soother for the common cold and cough (6).

The most common poppy species seen in meadows and fields is *P. rhoeas* L. It is poisonous to animals. The poppy is not poisonous until it flowers. Its harmful effects are caused by rhoeadin alkaloid. Alkaloids are one of the most common toxic agents that plants contain and are more soluble in organic solvents than they are in water. They are plant alkaloids that have physiological effects on the metabolism of living things, they usually have complex chemical structures, and they have a ring formation and contain nitrogen. Alkaloid consumption can lead to disorders of the CNS or liver and may cause sudden death (7). Oral consumption may cause symptoms such as vomiting, nausea, fatigue, and exhaustion. The alkaloids in wild weeds may cause various symptoms and side effects. These effects can be life-threatening (8). Our cases manifested side effects of the CNS. The fact that the child patient had a seizure suggests that younger patients are more sensitive; therefore, caution is warranted.

Most plant poisonings do not have specific antidotes. They are generally treated symptomatically. Most poisonings are mild, and IV hydration and simple decontamination methods provide relief to the patients. Asymptomatic patients can be discharged after 6–8 h of observation (3). We monitored our patients, performed gastric lavage, and delivered active charcoal and fluids. The symptoms disappeared approximately 6 h later, and all of our patients were discharged after being observed for 24 h.

In conclusions, our country has a very rich flora. In many of its regions, locals gather herbs and use them for treatment. Therefore, it is important to recognize the plants toxic to humans, to know their characteristics, and to raise public awareness on this issue. It must not be forgotten that the differential diagnosis of patients brought to the emergency service with altered mental status or neurological symptoms may also include poisonings. Otherwise, the diagnosis and treatment of the condition may be delayed.

**Informed Consent:** Written informed consent was obtained from patients who participated in this study.

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Case Report

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# Urethral Caruncle Causing Bilateral Bladder Diverticula: A Case Report

**Ekrem Özyuvalı[1], Mehmet Erol Yıldırım[1], Bahadır Kösem[2], Ersin Çimentepe[1]**

**[1]Department of Urology, Turgut Özal University School of Medicine, Ankara, Turkey**
**[2]Department of Anesthesiology, Turgut Özal University School of Medicine, Ankara, Turkey**

An urethral caruncle is a benign vascular tumor usually originating from the rear lip of the external urethral meatus and is usually observed in postmenopausal women. It is not included within the list of causes of bladder overdistension in women. We present a case of a urethral caruncle as a rare cause of acute urinary obstruction in a 71-year-old woman. The 71-year-old woman had occasional bleeding from a mass in the urethral meatus for 3 years. A reddish mass, measuring 3 cm in diameter, was noted at the posterior lip of the urethral meatus. The mass was diagnosed to be a urethral caruncle and was removed. Microscopically, the squamous epithelium, which covered the urethral caruncle, was found to be keratinized, with the proliferation of atypical cells with swollen nuclei in the entire mucosal layer. The patient could urinate better after the indwelling urethral catheter was taken out.

**Keywords:** Urethral caruncle, bladder, diverticula

## INTRODUCTION

Urethral caruncle (UC) is a sensitive vascular benign tumor localized on the posterior lip of the urethral meatus, and it was first described by Samuel Sharp in 1750 (1). It consists of chronic inflammatory cells, dilated vessels, and hyperplastic epithelium loosely surrounded with transitional and squamous epithelial cells (2). In addition, its etiology is still undetermined, with asymptomatic features; a small number of patients show symptoms such as dysuria, dyspareunia, hematuria, and sense of pressure in the perineal region (3). In this report, a case of UC causing infravesical obstruction and bladder diverticula in an elderly woman was presented.

## CASE PRESENTATION

A 71-year-old woman was admitted to the urology clinic with hematuria and a feeling of a lump in her genital region for 3 years. She has been in the post-menopausal state for 20 years on pelvic examination, there was a 3×2-cm reddish, raspberry-like, bleeding that was protruding circumferentially from the urethra and suggesting the presence of UC at the external urethra (Figure 1). She also had lower urinary tract symptoms such as pollakiuria, nocturia, and sense of residual urine. Uroflowmetry determined that the pre-operative maximum peak flow rate (Qmax) was 6 mL/s. She had normal postoperative serum BUN (blood urea nitrogen) (26 mg/dL) and creatinine (0.6 mg/dL) levels. Cystoscopy was performed using a 22-F cystoscope under spinal anesthesia. Diffuse trabeculation and two symmetrical diverticula was observed at posterolateral site of both ureteral orifices. The caruncle was excised. The patient started to urinate easily after the caruncle excision with a Qmax of 21 mL/s. Histopathological examination of the urethral lesion reported as the presence of UC. Written informed consent was obtained to publish the data and pictures of the patient.

## DISCUSSION

UC is the most common urethral lesion among middle-aged or elderly post- menopausal women, and it protruded through the external orifice as a raspberry-like soft mass (3). They are nodular and pedunculated lesions that can bleed easily with manupilation (4). However, most patients are asymptomatic; patients who had complaints of pain exaggerated by movement, urination and hematuria can be diagnosed easily with inspection and palpation (5).

However, the etiology is unclear; congestion of the urethra, rupture of cysts of Skene's ducts, chronic irritation of the urethral mucosa, and estrogen deficiency are generally suspected (5).

Topical estrogen treatment or electrocoagulation can be performed, but surgical excision is the most preferred method among urologists because of the malignancy risk (5).

UC is a very rare cause of urinary obstruction resulting bladder diverticula. Although there are conservative treatment strategies, big or persistent caruncles should undergo aggressive surgical treatment.

**Correspondence Author:**
Mehmet Erol Yıldırım E-mail: doctorerol@yahoo.com

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**FIGURE I.** Intraoperative appearance of the lesion

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Letter to the Editor

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# Parturient Dengue Hemorrhagic Fever: A Short Note

**Viroj Wiwanitkit**

**Wiwanitkit House, Bangkok, Thailand**

Dear Editor,

Dengue is an important tropical mosquito-borne infection that is a global public health threat (1). There are many infected and death cases in several tropical countries each year. Dengue can be seen in any age group (1). An interesting condition is parturient dengue. This condition is very interesting and rarely reported. Indeed, there is no doubt that a pregnant female who lives in a dengue-endemic area can get a mosquito bite and develop dengue. Here, the author summarizes previous reported cases of parturient dengue hemorrhagic fever from Thailand. According to the literature search (PubMed and Scopus), there are at least three case reports (2-4). All cases had high fever and experienced normal labor pain. Focusing on the clinical presentation, the classical findings such as fever, headache, retro-orbital pain, rash, and marked muscle and joint pains could be seen in all cases. All are term pregnancy cases, and the delivery is by normal labor in 2 cases and cesarean section in 1 case. The patient who underwent a cesarean section has bleeding complications after surgery that requires intensive care. All cases experienced complete recovery within 1 week. In all cases, primary dengue infection can also be seen in the infant. There is no other abnormality or anomaly in the infant. These data can warn the practitioner about the importance of dengue that should be kept in mind in differential diagnosis for the obstetrician in the era that dengue already expands worldwide.

**Ethics Committee Approval:** N/A.

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**Correspondence Author:**
Viroj Wiwanitkit E-mail: wviroj@yahoo.com

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