

Acil Serviste Direkt Grafî Tarihe mi Karışıyor?

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Acil Tıp AD

Sunum içeriği

- Tetkik istemi nasıl gerçekleşmeli?
- Acil serviste sık istem yapılan düz grafilerin kullanımı hakkında güncelleme
- Düz grafiler tarih mi oluyor?

Tetkik istemi nasıl olmalı?

1. Tetkik için radyolog ile görüşmek ve istemi kabul ettirmek için soruları yanıtlamak

- Ne?
- Nerede?
- Niçin?
- Ne zaman?
- Nasıl?

Tetkik istemi nasıl olmalı?

2.Radyasyon açısından hastanın bilgilerinin sorgulanması ve istemin yapılması

- Ad soyad
- Gebelik durumu
- Clostridium difficile / MRSA pozitifliği
- Klinik bilgi verilmesi
- İşlemi komplike edebilecek faktörlerin (DM, epilepsi

Tetkik istemi nasıl olmalı?

3. Hastanın işlem için hazırlanması

- Baryumlu tetkikler öncesi hazırlık

- Kontrast madde kullanımı öncesi allerji sorgulaması ve damar yolu açılması

Radyasyon !

TETKİK	RADYASYON DOZU (mSv)	Eşdeğer göğüs filmi sayısı
Ekstremita (örn. diz)	0.01	0.5
Göğüs filmi	0.02	1
Servikal grafi	0.1	5
Kalça grafisi	0.3	15
Dorsal omurga	1	50
Pelvik düz grafi	1	50
Batın grafisi	1.5	75
BT Beyin	2	100
Lumbar grafi	2.4	120
BT göğüs/batın	8	200

SORUYORUM?

➤ ACİL SERVİSTE DÜZ GRAFİLER TARİH Mİ OLUYOR?

➤ YÜKSEK RADYASYON İLE GERÇEKLEŞEN TETKİKLERDEN ÖNCE BİR ŞANS MI?

Acil serviste düz grafi kullanımı

◊ Kafa grafileri

◊ Pelvis grafisi

◊ Yüz grafileri

◊ Göğüs grafisi

◊ Alt ve üst ekstremit
grafileri

◊ Batın grafisi

◊ Servikal grafil

◊ Pediatrik filmler

ASLINDA Bİ SORUNUNUZ
YOK GİBİ AMA EN İYİSİ
KAFANIZI KARIŞTIRMAK İÇİN
Bİ SÜRÜ TEST YAPALIM...



Kafa grafisi
çekelim mi?

Skull fracture vs. accessory sutures: how can we tell the difference?

Thomas Sanchez • Deborah Stewart •
Matthew Walvick • Leonard Swischuk

Kafatası kırığı	Aksesuar sütün
Nonsklerotik kenarlar ile keskin parlaklık	Sklerotik patern ile zig zag patern
Sütüre yaklaştıkça genişler	Eşlik eden diastaz yoktur
Komşu sütün hatlarını çaprazlar	Komşu sütün hatları ile birleşir
Sıklıkla unilateral ve bilateral ise asimetrik	Sıklıkla bilateral ve oldukça simetrik
Yumuşak doku şişliği eşlik eder	Yumuşak doku şişliği bulunmaz.

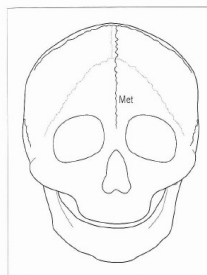


Figure 2.19 Accessory suture – the metopic (Met). It divides the frontal bone into two halves.



Figure 2.20 Accessory suture – the metopic. Incidentally, a wormian bone is present in the sagittal suture and another lies within the lambdoid suture. Wormian bones are commonplace.

Figure 2.22 Accessory parietal suture (arrow).

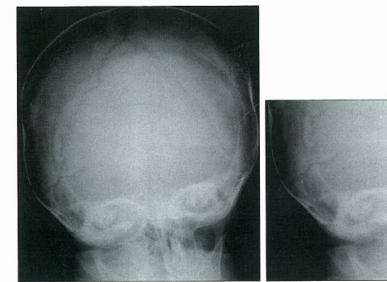


Figure 2.26 Accessory suture – the mendoal. It may be whole (i.e. complete). Usually it is incomplete. In this patient it is incomplete and on one side of the occipital bone only.

Skull Radiograph Interpretation of Children Younger Than Two Years: How Good Are Pediatric Emergency Physicians?

Study objective: We determined pediatric emergency physicians' accuracy in interpreting skull radiographs of children younger than 2 years and determined the characteristics of misinterpreted skull radiographs.

Methods: A set of 31 skull radiographs (16 with fractures, 15 normal) was compiled from children younger than 2 years who were evaluated for head trauma in a pediatric emergency department from March 1998 to March 2000. A pediatric radiologist reinterpreted the films and agreed with all of the original readings in the final radiographic impression. Each of the 16 skull radiographs with fractures was considered radiographically correct if the correct skull location and posterior fracture were correctly recognized.

Results: Twenty-five of 26 eligible pediatric emergency physicians completed the study. The mean age of the pediatric emergency physicians was 36 years. The mean age of the children was 14 months. The mean sensitivity for diagnosing correct interpretation was 76%, 100%, and 100% for the three groups. The mean sensitivity for diagnosing incorrect interpretation was 100%, 100%, and 100% for the three groups. The mean specificity for diagnosing correct interpretation was 100%, 100%, and 100% for the three groups. The mean specificity for diagnosing incorrect interpretation was 100%, 100%, and 100% for the three groups.

Conclusion: Pediatric emergency physicians have limited accuracy in interpreting skull radiographs of children younger than 2 years. Shorter fractures are more commonly misinterpreted.

Ann Emerg Med. 2004;43:718-22.

Hafif kafa travma & kafa grafisi ?

- Advanced Trauma Life Support for Doctors > Student Course Manual. 7th ed.> American College of Surgeons Committee on Trauma - 2007
- ATLS, 8 th ed. The evidence for change. J Trauma; 64:1638-1650.
- Tintinalli's Emergency Medicine: A Comprehensive Study Guide > Section 21. Trauma> Chapter 254. Head Trauma in Adults and Children
- Tintinalli's Emergency Medicine: A Comprehensive Study Guide > Section 12. Pediatrics> Chapter 132. Minor Head Injury in Infants and Children

Kafa travması sonrası...

Acute Head Trauma



Presenting Signs and Symptoms

- Focal neurologic deficits (caused by intracerebral and extracerebral hematomas)
- Generalized or focal cerebral edema that may lead to symptoms of herniation (through tentorium or foramen magnum)
- Concussion (post-traumatic loss of consciousness)

Approach to Diagnostic Imaging

■ 1. Computed tomography

- Preferred study for detecting skull fracture, *acute* intraparenchymal bleeding, and extra-axial hemorrhage (acute subdural and epidural hematoma)
- The use of wider windows improves ability of CT images to delineate isodense extracerebral hematoma
- Demonstrates ventricular shift and sulcal effacement, subtle findings that should raise suspicion of an isodense subdural hematoma

Clinical Policy: Neuroimaging and Decisionmaking in Adult Mild Traumatic Brain Injury in the Acute Setting

From the American College of Emergency Physicians (ACEP)/Centers for Disease Control and Prevention (CDC) Panel to Revise the 2002 Clinical Policy: Neuroimaging and Decisionmaking in Adult Mild Traumatic Brain Injury in the Acute Setting:

Andy S. Jagoda, MD, Chair

Jeffrey J. Bazarian, MD, MPH

John J. Bruns, Jr, MD

Stephen V. Cantrill, MD

Alisa D. Gean, MD

Patricia Kunz Howard, PhD, RN, CEN, ENA Representative

Jamshid Ghajar, MD, PhD

Silvana Riggio, MD

David W. Wright, MD

Robert L. Wears, MD, MS, Metl

Aric Bakshy, MD

Paula Burgess, MD, MPH, Divis

National Center for Injury Pre

Centers for Disease Control

Marlena M. Wald, MLS, MPH, Ep

Injury Response, National Cen

and Control, Centers for Disea

Rhonda R. Whitson, RHIA, Clinic

CRITICAL QUESTIONS

1. Which patients with mild TBI should have a noncontrast head CT scan in the ED?

Recommendations

Level A recommendations. A noncontrast head CT is indicated in head trauma patients with loss of consciousness or posttraumatic amnesia only if one or more of the following is present: headache, vomiting, age greater than 60 years, drug or alcohol intoxication, deficits in short-term memory, physical evidence of trauma above the clavicle, posttraumatic seizure, GCS score less than 15, focal neurologic deficit, or coagulopathy.

Approved by the ACEP Board of Directors
Supported by the Emergency Medicine Foundation

Yüz grafisi
çekelim mi?

Facial Fracture



Presenting Signs and Symptoms

Facial swelling and ecchymoses

Approach to Diagnostic Imaging

■ 1. Plain radiograph



- Preferred screening study for demonstrating facial fractures (most commonly involving the nose, zygomatic arches, lateral walls of the maxillary antra, and floors of the orbits)

■ 2. Computed tomography



- Indicated if plain radiographs demonstrate a complex fracture that must be defined or suggest a blow-out fracture of the floor of the orbit, and when there is a strong clinical suspicion of fracture and a plain radiograph may not be needed

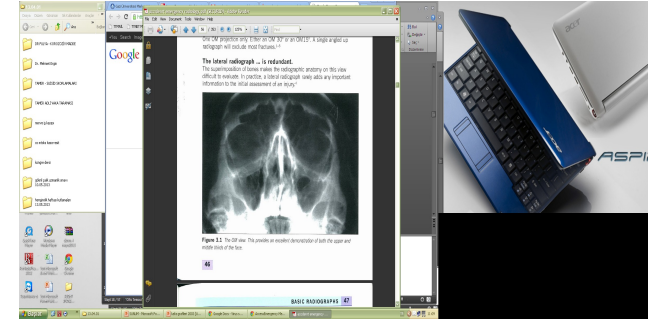
Note: Both axial and coronal 3-mm-section scans are usually required for full evaluation.

R. J. Lewandowski · C. A. Rhodes
K. McCarroll · L. Hefner

**Role of routine nonenhanced head computed tomography scan
in excluding orbital, maxillary, or zygomatic fractures secondary
to blunt head trauma**

Yüz grafisi çektireceksen;

- Orta yüz ve orbita için
 - Oksipomental grafi
 - Oksipomental 30°
 - Lateral grafi tercih edilmemeli
- Mandibula
 - Ortopantomogram (OPG)
- Burun
 - Grafi çekmeye gerek yoktur!



Ekstremiteler
grafileri çekelim
mi?

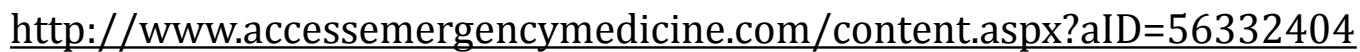
Ekstremitte grafileri çekelim mi?

Üst ekstremitte

- Omuz
- Dirsek
- Distal ön kol ve el bileği
- El ve parmaklar

Alt ekstremitte

- Kalça ve proksimal femur
- Diz
- Ayak bileği ve arka ayak
- Orta ayak ve ön ayak



Ekstremitte grafisi isterken

- Klinik bakı...
- Temel prensipler:
 - Standart iki yönlü istenmeli.
 - Zaman zaman kırık iki standart yönde görülmeyebilir.
 - Özel açılar ile çekim...
 - Kırığın görülmesinin istisnai olarak zor olduğu durumlarda ise ikiden daha fazla yönden çekim rutindir.

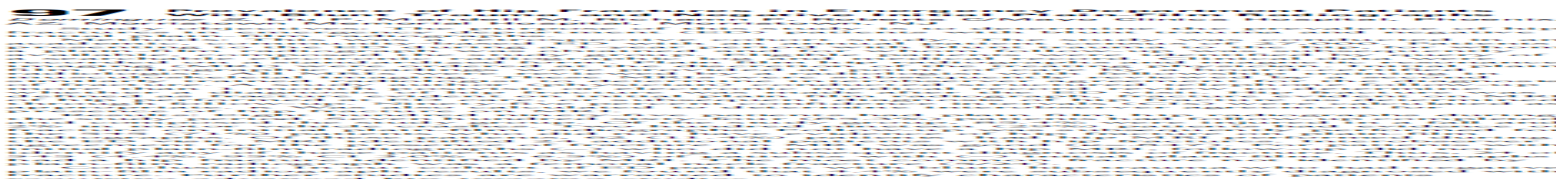
Limitasyonlar !

Emergency Radiology (2004) 10: 182–185
DOI 10.1007/s10140-003-0321-4

ORIGINAL ARTICLE

Martti J. Kiuru · Ville V. Haapamäki
Mika P. Koivikko · Seppo K. Koskinen

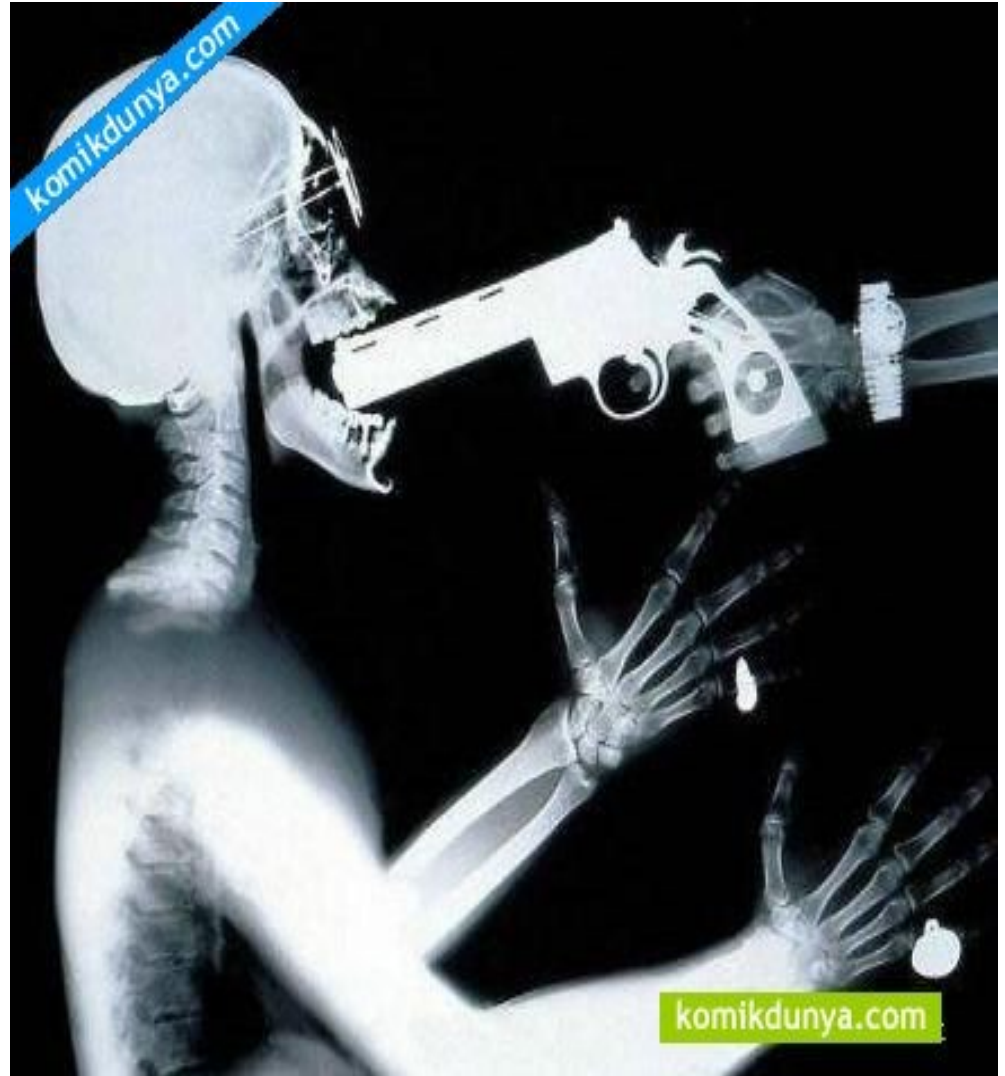
Wrist injuries; diagnosis with multidetector CT



Ekstremité grafileri

- Klinik bulgular ve şüphe...
- Limitasyonlar iyi bilinmeli.
- Nerede ileri görüntüleme yapılmalı?
- ***Fizik bakı ile düz grafi arasında uyumsuz bulgular!***

Servikal grafi
çekelim mi?



Use of Plain Radiography to Screen for Cervical Spine Injuries

William R. Mower, MD, PhD*
Jerome R. Hoffman, MA, MD*
Charles V. Pollack, Jr., MA, MD*
Michael I. Zucker, MD**
Brian J. Browne, MD**
Allan B. Wolfson, MD*
For the NEXUS Group

See related articles, p. 8, p. 12, p. 17, and p. 22.

Study objective: Standard radiographic screening may fail to reveal any evidence of injury in some patients with spinal injury. The purposes of this investigation were to document the efficacy of standard radiographic views and to categorize the frequencies and types of injuries missed on plain radiographic screening of the cervical spine.

Methods: All patients with blunt trauma selected for radiographic cervical spine imaging at 21 participating institutions underwent a standard 3-view series (cross-table lateral, anteroposterior, and odontoid views), as well as any other imaging deemed necessary by their physicians. Injuries detected with screening radiography were then compared with final injury status for each patient, as determined by review of all radiographic studies.

Results: The study enrolled 34,069 patients with blunt trauma, including 818 patients (2.40% of all patients; 95% confidence interval [CI] 2.40% to 2.40%) having a total of 1,496 distinct cervical spine injuries. Plain radiographs revealed 932 injuries in 498 patients (1.46% of all patients; 95% CI 1.46% to 1.46%) but missed 564 injuries in 320 patients (0.94% of all patients; 95% CI 0.94% to 0.94%). The majority of missed injuries (436 injuries in 237 patients [representing 0.80% of all patients]; 95% CI 0.80% to 0.80%) occurred in cases in which plain radiographs were interpreted as abnormal (but not diagnostic of injury) or inadequate. However, 23 patients (0.07% of all patients; 95% CI 0.05% to 0.09%) had 35 injuries (including 3 potentially unstable injuries) that were not visualized on adequate plain film imaging. These patients represent 2.81% (95% CI 1.80% to 3.63%) of all injured patients with blunt trauma undergoing radiographic evaluation.

Conclusion: Standard 3-view imaging provides reliable screening for most patients with blunt trauma. However, on rare

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SONUÇ:

- Standart 3 yönlü görüntüleme künt travma olan hastalarda güvenilir bir tarama testidir.
- Ancak nadir durumlarda ciddi unstabil yaralanmayı tespit etmede başarısız olabilir.
- Ayrıca, az bir hasta grubunda yeterli düz grafi elde etmekte zorluk olmaktadır.

Giang K. Nguyen · Robert Clark

Adequacy of plain radiography in the diagnosis of cervical spine injuries

Yüksek risk grubu...

Tablo 255-7 Servikal yaralanma açısından yüksek risk grubu

Yaralanma mekanizması	Yüksek hız (>35 mph or 56 kph) motorlu araç kazası Bir yolcunun öldüğü motorlu araç kazası Hareket eden bir aracın çarptığı yaya >10 ft veya 3 m yüksekten düşme
Birincil klinik değerlendirme	Önemli veya ciddi kapalı kafa travması Servikal yaralanmaya atfedilen nörolojik semptom/bulgu Pelvik veya multipl ekstremitte yaralanması
Ek bilgi	BT de intrakraniyel kanama

Düşük risk grubunda tüm hastalara servikal grafi çekelim mi?

◦ *National Emergency X-Radiography Utilization Study Criteria*

◦ Künt travmalı hastada eğer tüm kriterler karşılanıyorsa, servikal vertebra hasarı düşük ihtimaldir:

◦ Posterior servikal orta hat hassasiyeti olmaması

◦ Nörolojik defisit olmaması

◦ Normal uyanıklık düzeyi

◦ İntoksikasyon olmaması

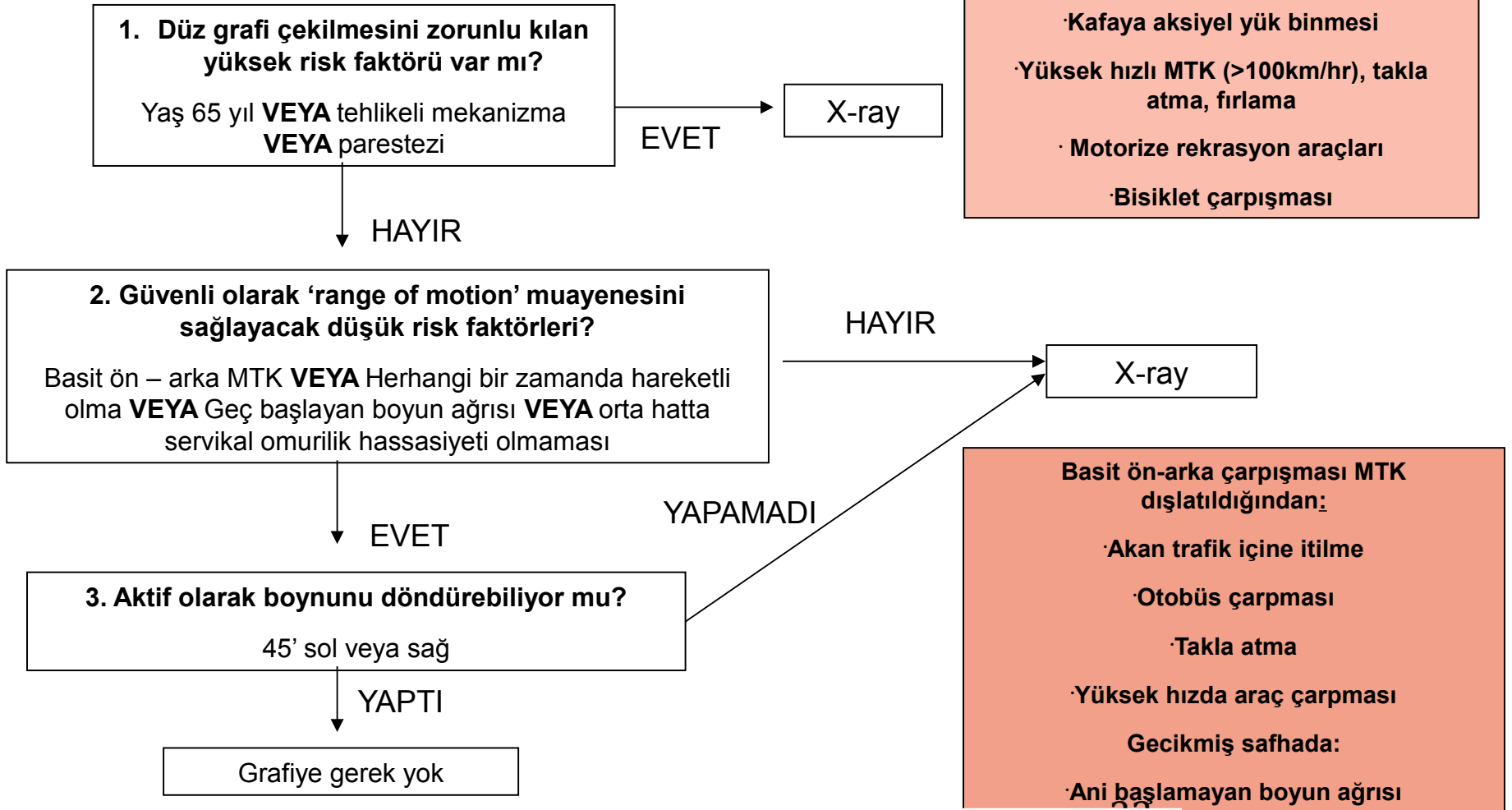
Hoffman JR, Mower WR, Wolfson AB, et al: New Engl J Med 343:94, 2000.

ak bariz

ağrılı başka bir yaralanma olmaması

Canadian Cervical Spine Rule for Radiography

GKS 15 OLAN BİLİNCİ AÇIK VE STABİL TRAVMA HASTASINDA
SERVİKAL OMURGA YARALANMA ŞÜPHESİ OLDUĞUNDA



Hangi yönleri kullanalım?

○ Üç yönlü grafi öneriliyor...

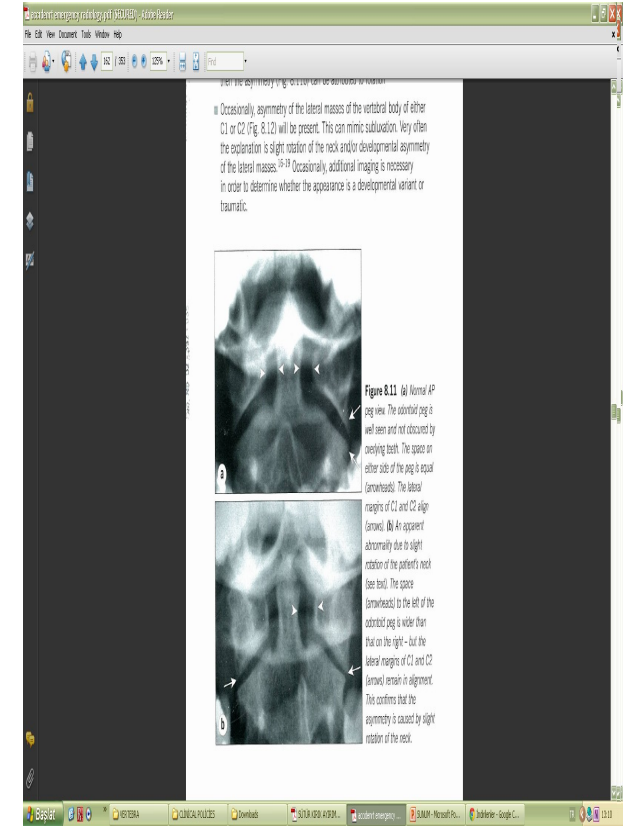
○ Yan grafi

○ T1 vertebra cisimi görülecek!

○ Uzun AP Grafi

○ Ağzı açık odontoid grafi

○ C1-C2 artikülasyonu görmek için!



Torakal-lumbal bölge !?

- Servikal görüntülemeadaki esaslar geçerlidir.

Sinch R, and et al. Emerg Med Australias 2009,21:419.

- Spinal kolonda bir seviyede yaralanma tespit edildiyse, omurganın geri kalan bölümleri de görüntülenmelidir.

- Omurga kırığı olan hastaların yaklaşık %10'unda ikinci kırık

Tintinalli's Emergency Medicine: A Comprehensive Study Guide> Section 21. Trauma> Chapter 255.

Spine And Spinal Cord Trauma

Hangi hasta grubu?

Tablo 255-8. Travma sonrası torakolomber görüntüleme endikasyonu olan hasta grubu

Mekanizma	Ateşli silah yaralanması Yüksek enerji Araç ile takla atma veya araçtan fırlama >10 ft veya 3 m yüksek ten düşme Araç çarpan yaya
Fizik bakı	Orta hatta ağrı Orta hatta fokal hassasiyet Spinal kord veya sinir kök basısına dair kanıt
Eşlik eden yaralanmalar	Servikal kırık Kot kırığı Aortik yaralanma İçi boş organ yaralanması

Hangi hastada BT?

Review Article

The Journal of TRAUMA® Injury, Infection, and Critical Care

doi: 10.1111/j.1742-6723.2006.00893.x

Emergency Medicine Australasia (2006) 18, 471-477

Visceral Torso Computed Tomography for Clearance of the Thoracolumbar Spine in Trauma: A Review of the Literature

Kenji Inaba, MD, MS, Felipe Munera, MD, Mark McKenney, MD, Carl Schulman, MD, MSPH, Marc de Moya, MD, Luis Rivas, MD, Amelia Pearce, MD, and Stephen Cohn, MD

Background: Accurate screening of the thoracolumbar spine (TLS) remains problematic in the care of trauma patients. The current standard of care for TLS screening is not clearly defined. In trauma patients undergoing computed tomography (CT) of the chest and/or abdomen, compelling supportive evidence for reformatting and reusing this CT data to clear the thoracolumbar spine has accumulated over the last 3 years. The objective of this review was to identify and review all published studies comparing reformatting CT to traditional plain radiography for TLS clearance.

Methods: A Medline search for all English language articles published on this subject since 1980 identified seven studies. Each was classified according to the levels of evidence classification of the

Agency for Health Care Policy and Research. The methodology of each study was reviewed for the CT protocol, utilization of radiologist blinding and whether historical dictated reports or de novo image readings were used for comparison. The sensitivity and specificity of each study and the gold standard utilized in its calculation was noted. Where available, detailed information regarding the missed injuries and their clinical relevance was abstracted for each study.

Results: All evaluated studies demonstrated superior sensitivity and interobserver variability for reformatting CT compared with plain radiographic screening. CT was also more accurate in localizing, classifying, and delineating the age, bony intrusion, and soft-tissue damage associated with the fracture. For studies

with time-motion components, a protocol utilizing CT clearance was not only more accurate but faster and more economical. Screening with reformatting visceral CT data required no additional scan time or radiation exposure.

Conclusion: The evidence to date demonstrates the superior sensitivity of reformatting visceral CT for detecting thoracolumbar spine injury. With no further patient movement, radiation exposure, cost, or time, trauma patients undergoing visceral CT can have their thoracolumbar spine promptly evaluated. Further prospective evaluation of the CT protocols to optimize visualization of both the viscera and the bone is warranted.

Key Words: Computed tomography, X-ray evaluations, Thoracic vertebrae, Lumbar vertebrae, Retrospective studies.

J Trauma. 2006;60:915-920.



ORIGINAL RESEARCH

State of play: Clearing the thoracolumbar spine in blunt trauma victims

Marten C Howes¹ and Andrew P Pearce²

¹Bunbury Regional Hospital, Bunbury, Western Australia, and ²Royal Adelaide Hospital, North Terrace, South Australia, Australia

○ Düz grafide tespit edilen kemik yaralanması veya subluksasyon

○ Nörolojik defisit (fakat düz grafide açık bir anormallik yok)

○ Ciddi boyun ve sırt ağrısı (normal düz grafiler)

Multi travma
hastasında grafi
çekelim mi?

Çekeceksek
hangileri?



Whole Body Imaging in Blunt Multisystem Trauma Patients Without Obvious Signs of Injury Results of a Prospective Study

Ali Salim, MD; Barapani Sangthong, MD; Matthew Martin, MD; Carlos Brown, MD; David Loh, MD; Demetrios Demetriades, MD

Hypothesis: The use of liberal whole body imaging (pan scan) in blunt-trauma patients without obvious signs of chest or abdominal injury.

Design: Prospective observational study.

Setting: Academic level I trauma center.

Patients: All patients admitted following blunt multisystem trauma.

Interventions: Pan scan, including computed tomography (CT) of the head, cervical spine, chest, abdomen, and pelvis. With the following exceptions: (1) patients who were hemodynamically unstable; (2) normal abdominal examination; (3) stable patients with a normal pelvic exam; (4) patients who achieved level of consciousness; and (5) significant mechanism based on these findings were recorded.

Main Outcome Measures: Any alteration in the normal treatment plan as a result of the pan scan, including admission, discharge, surgery, transfusion, and additional diagnostic studies.

Results: One thousand patients underwent pan scan during the study period. Sixty patients (6%) were excluded because of patients with no obvious signs of abdominal injury. Of the 940 patients who underwent pan scan, 100% of head CT scans, 94% of cervical spine CT scans, 100% of chest CT scans, and 17% of abdominal CT scans showed abnormal scan findings.

Conclusions: The use of the pan scan based on mechanism, significant abnormality, pelvic exam, and level of consciousness warranted clinically significant change in treatment in nearly 19% of patients.

Arch Surg. 2006;141:468-475

Whole-Body Imaging in Blunt Multisystem Trauma Patients Who Were Never Examined

Graham E. Snyder, MD

From the Department of Emergency Medicine, WakeMed Health and Hospitals, Raleigh, NC; and the Department of Emergency Medicine, University of North Carolina, Chapel Hill, NC.

0196-0644/\$-see front matter

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doi:10.1016/j.annemergmed.2007.03.023

[Ann Emerg Med. 2008;52:101-103.]

met criteria for immediate intubation were considered in a study of patients with "no obvious signs of injury.")

- Klinik bakı ve hikaye alınması sonrası ciddi yaralanmadan şüphelenilmeyen hastalarda radyasyon riskinin kabul edilemeyecek kadar yüksek olduğu...
- Tedavi planı değişikliklerinin kaçının klinik olarak önemli -mesela taburculuktan acil operasyona şeklinde- , klinik olarak önemsiz -kot kırığı gibi-, veya klinik olarak zarar verici olduğunun belirtilmediği...

Multi travma hastası...

- Primer bakı
- Sekonder bakı
- Radiografik inceleme
- Laboratuvar Analizleri

ATLS – Advanced Trauma Life Support

○ Primer Survey and Resuscitation

○ F. Adjuncts to Primary Survey and Resuscitation

○ ...

○ 5 Consider the need for and obtain *(1) an AP chest x-ray (2) an*
ATLS For Doctors: American College of Surgeons Committee on Trauma; Student Course Manual, 2007 >
Chapter 1. Initial Assessment and Management p.34
ray.

Special Report

The Journal of TRAUMA® Injury, Infection, and Critical Care

Advanced Trauma Life Support, 8th Edition, The Evidence for Change

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The American College of Surgeons Committee on Trauma's Advanced Trauma Life Support Course is currently taught in 80 countries. The 8th edition has been revised following broad input by the International ATLS sub-

committee. Graded levels of evidence were used to evaluate and approve changes to the course content. New materials related to principles of disaster management have been added. ATLS is a common language teaching one safe

way of initial trauma assessment and management.

Key Words: Wounds and Injuries, Traumatology [education], Life Support Care, Emergency Treatment [standards], Resuscitation [education].

J Trauma. 2008;64:1638-1650.

Radiografik inceleme

- ◊ İlk değerlendirme sonrası hızlıca operasyon odasına veya BT odasına ***transport edilmeyen*** hastalar
 - ◊ Göğüs ve pelvik grafiler alınabilir.
- ◊ ***Torsoya isabet etmiş ateşli silah yaralanması*** olan hasta
 - ◊ Göğüs filmi ($\pm$ batın) çekilmelidir.
- ◊ Uygun ekstremitte grafileri
 - ◊ Hemodinamik açıdan stabil olan hastada fizik bakı bulgularına

Göğüs filmi...

Akciğer grafisi

- Acil serviste en çok istenen tetkik!

- Jeografik yaklaşım

- Önerilmiyor!

- Semptom bazlı yaklaşım

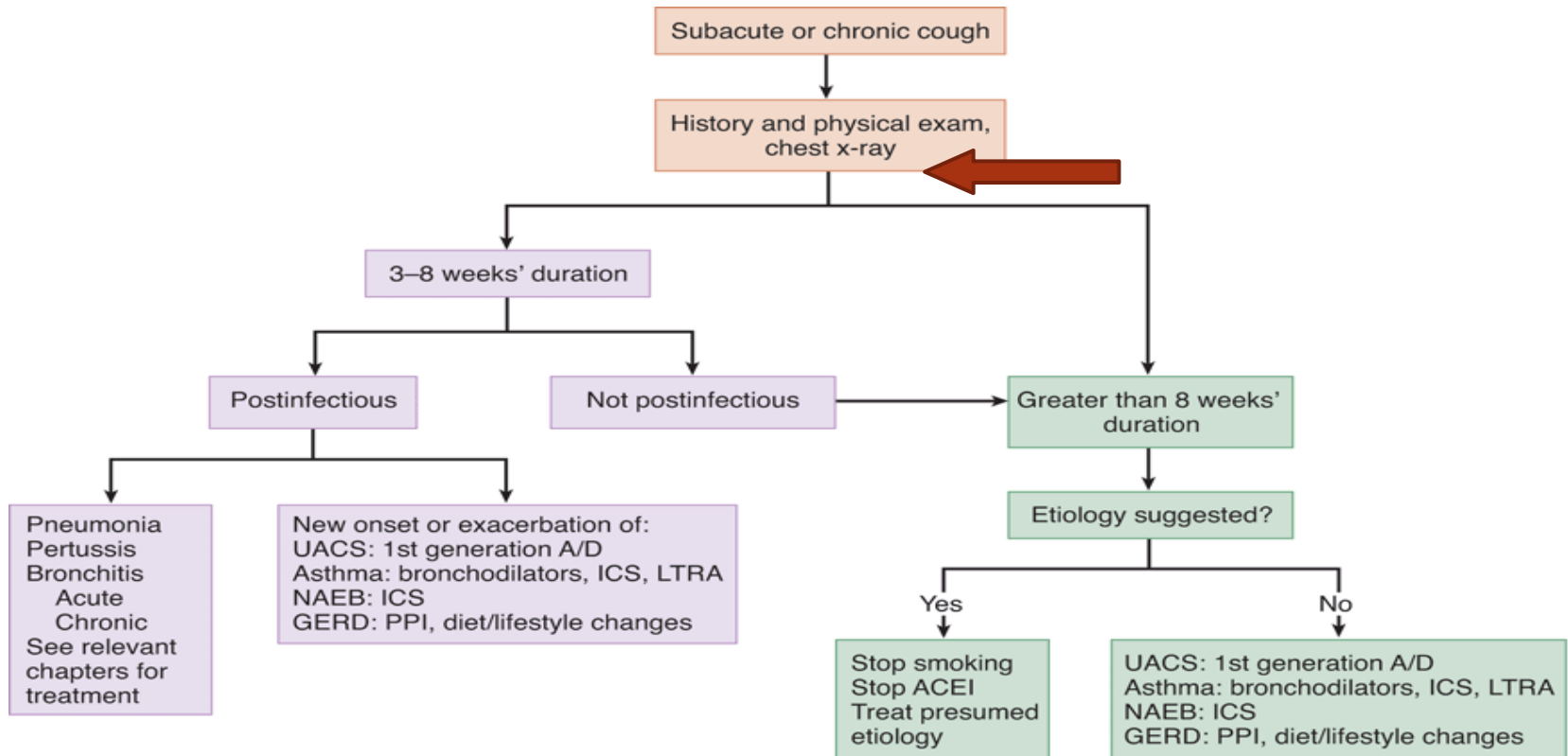
- Kullanılabilir.

Hangi klinik durumlarda?

Tablo 6. Klinik presentasyona dayanan radiografi yorumlanması

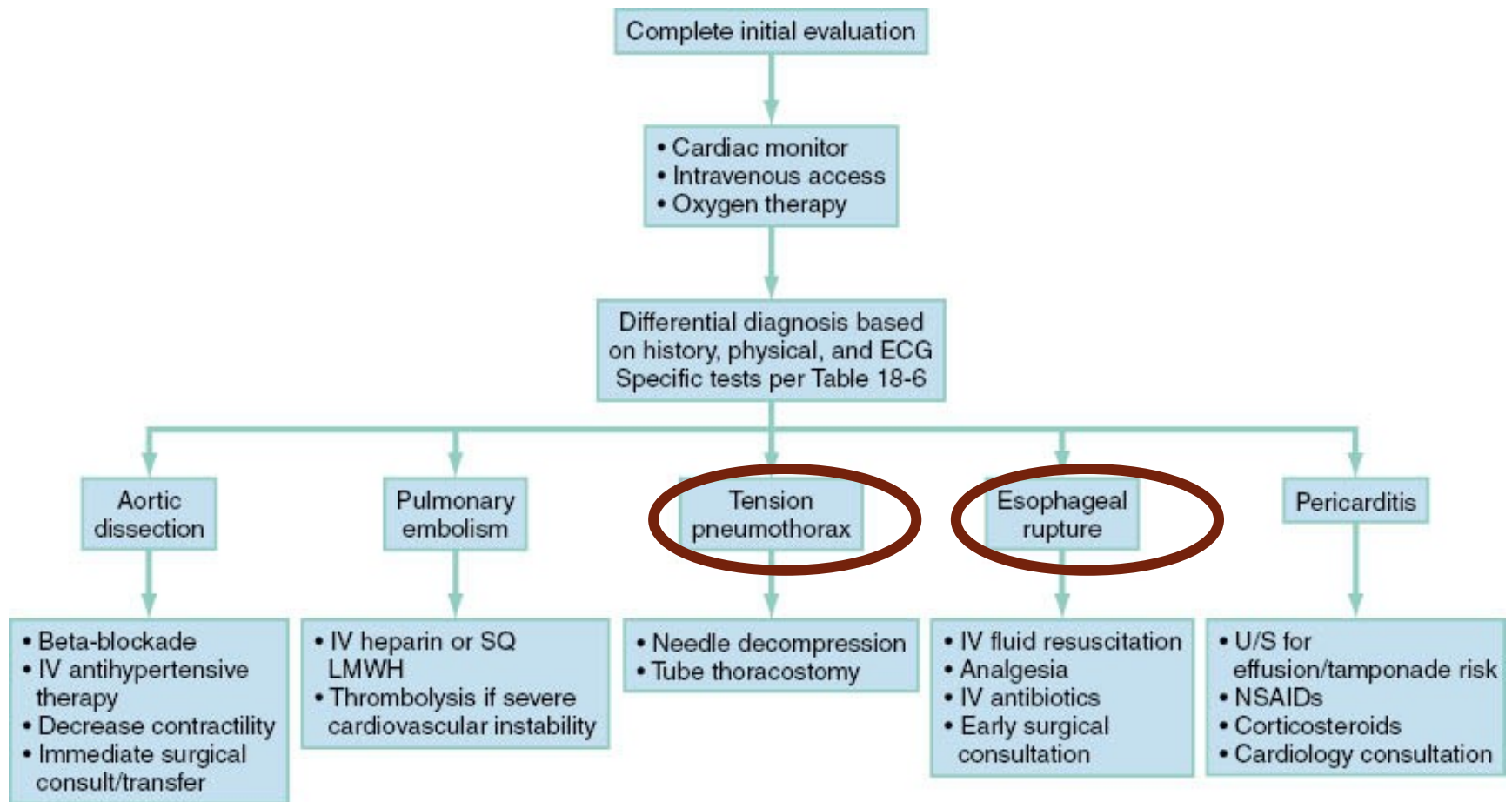
Semptom	Tipik radiografik bulguya sahip hastalıklar
Öksürük ve/veya ateş	Pnömoni, tüberküloz, kanser
Göğüs ağrısı	Pnömotoraks, aort diseksiyonu, pulmonar embolizm, kot kırığı, kanser.
Dispne	Kojestif kalp yetmezliği/akciğer ödemi, pulmoner embolizm, KOAH, Perikardiyal effüzyon, kanser
Travma	Aort diseksiyonu, pnömotoraks, hemotoraks, akciğer kontüzyonu, kot kırığı

Akut/kronik öksürük



Source: Tintinalli JE, Stapczynski JS, Ma OJ, Cline DM, Cydulka RK, Meckler GD:
Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 7th Edition:
<http://www.accessmedicine.com>
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Nonkardiyojenik göğüs ağrılı hastaya yaklaşım



Rosen's Emergency Medicine Chapter 18. Chest Pain Figure 18.3 Clinical guidelines for department management of chest pain from potentially catastrophic nonmyocardial origins

Non kardiyojenik göğüs ağrılı hastaya yaklaşım

◦ Pneumothorax

Yararlı testler

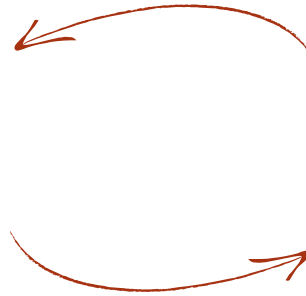
◦ *Göğüs filmi*
tanısal...

◦ Tansiyon pnx fizik
bakı ile tespit
edilmelidir.

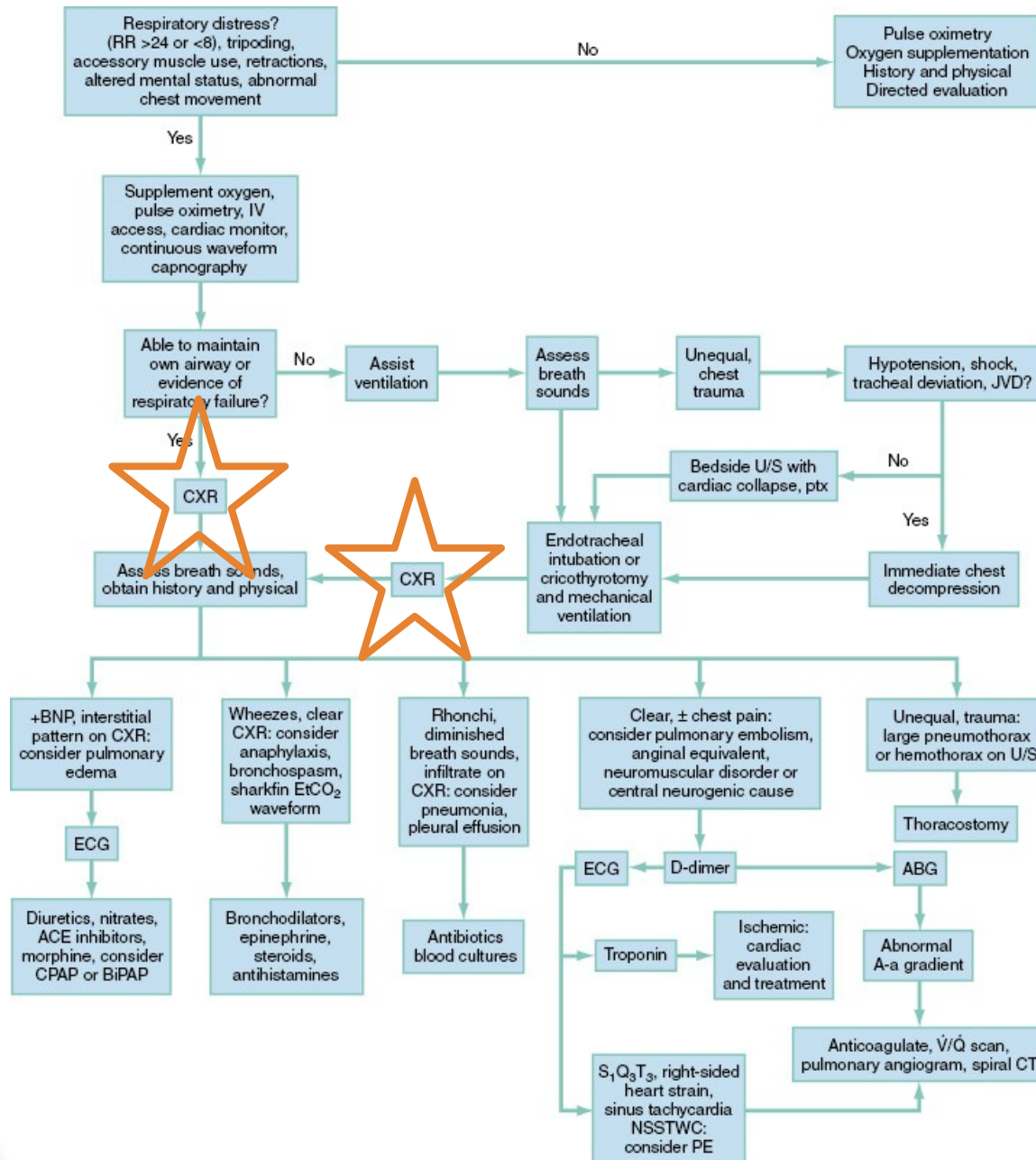
◦ Özefagial rüptür

Yararlı testler

◦ *Göğüs filmi*
genellikle hava, sol
tarafı plevral
effüzyon,
pneumothorax veya
genişlemiş
mediastinum



Dispneik hastaya yaklaşım



Rosen's Emergency Medicine Chapter 17. Dyspnea> Figure 17.1 Rapid assesment and stabilization of a dyspneic patient.

Batın grafileri ...



Non travmatik akut abdominal ağrı

0 Düz batın grafisi şüphelenilen şu klinik durumlarda kullanılmalıdır:

0 **Perforasyon** – supin DBG ve ayakta Göğüs filmi

0 **Obstrüksiyon** – supin DBG ve ayakta Göğüs filmi

Accident & Emergent Radiology A Survival Guide. 2nd Ed. Raby N, Berman L, Lacey G. Elsevier Press. 2005

0 **Renal kolik** – supin DBG (kısmi IVU'nun parçası olarak)

Tintinalli's Emergency Medicine: A Comprehensive Study Guide> Section 68. Acute Abdominal Pain

0 Düz batın grafilerinin kullanımı **obstrüksiyon, sigmoid volvulus, perforasyon, veya ciddi konstipasyon** ile sınırlı

Kısıtlılıklar

Renal taşların >%90 kalsiyum içermesine rağmen, < %50

Accident & Emergent Radiology A Survival Guide. 2nd Ed. Raby N, Berman L, Lacey G. Elsevier Press. 2005

Tintinalli's Emergency Medicine: A Comprehensive Study Guide> Section 68. Acute Abdominal Pain

Kontrastsız abdominal periteneal ve ureter taş tanısında tercih edilecek görüntüleme yöntemidir.

Ahn S, Mayo-Smith W, Murphy B, et al. Radiology 225: 159, 2002.

Musson RE, Bickle, Vijay RKP. Postgrad Med J 87: 274, 2011

53

Avakta göğüs filmi serbest havayı tespit etmede DBG'den



SONUÇ - 1

- Acil tıp uzmanları
- Tanısal görüntülemenin kullanımı ve yorumlanması temel becerilerden biridir.
- Radiografilerin ve diğer görüntüleme tetkiklerinin uygun endikasyonlarını anlamak ve ön yorumu doğru şekilde yapmak zorundadır.

Schwartz DT. Ann Emerg Med 58;4:296

Perina DG and et al. Ann Emerg Med. 2011.; 57:e1-e5

duşunmalıdır.

Sonuç - 2

- Tanısal görüntüleme kullanımı ve yorumlamanın temel bilgileri acil tıp eğitimi müfredatı içinde yer almalıdır

Schwartz DT. Ann Emerg Med 58;4:296

Perina DG and et al. Ann Emerg Med. 2011.; 57:e1-e5

- Kliniğimizdeki uygulama
 - Düz grafilerin yorumlanması

- Accident and emergency radiology – A survival guide (2nd ed)

Sonuç -3

Düz grafi = radyografi = X-ray

- ◊ Ucuz ve kolay ulaşılabilir
- ◊ Yatak başında uygulanabilir
- ◊ Yorum için radyolog ihtiyacının olmaması
- ◊ Radyasyon dozunun düşük olması

Ne kadar yakın gelecekte ?

○ Ultrasonografi

○ Iaton A and et al. **Occult fractures of the scaphoid: the role of ultrasonography in the emergency department.** Skeletal Radiol 2011 Jan 1.

○ You JS, and et al. **Role of sonography in the emergency room to diagnose sternal fractures.** J Clin Ultrasound 2010;38(3).1263-8.

○ Radyasyon dozu azaltılmış yeni jenerasyon BT ler...

○ Udayasankar UK and et al. **Acute abdominal pain: value of non-contrast enhanced ultra-low-dose multidetector row CT as a substitute for abdominal radiographs.**



Sabrınız için teşekkür ederim

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