UNIVERSITY OF CRETE

ΧΩΛΟ ΙΣΧΙΟ

Ρ. ΔΗΜΗΤΡΙΟΥ

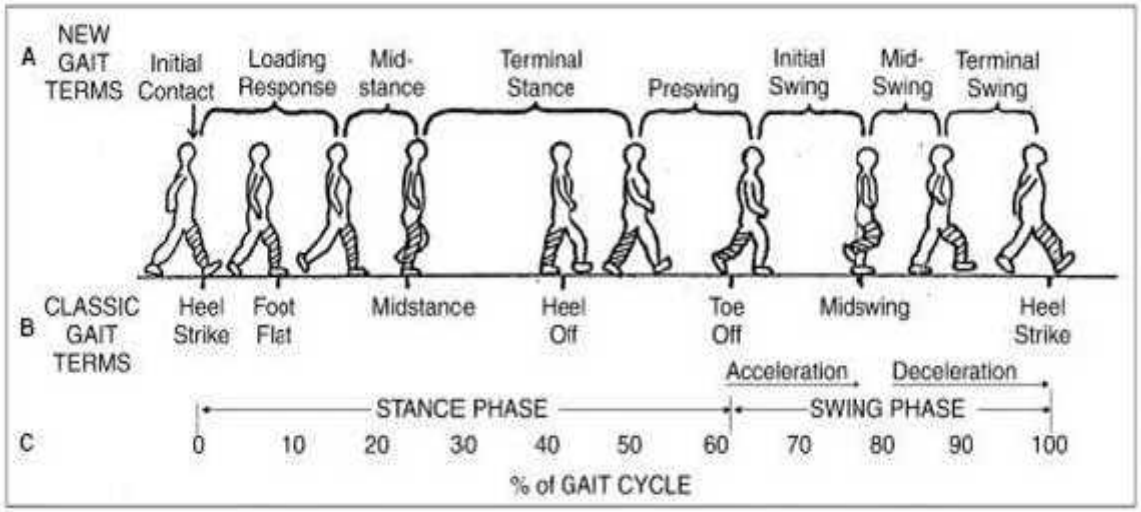
ΠΑΙΔΟΟΡΘΟΠΑΙΔΙΚΟΣ

Επικ. Καθ. Ορθοπαιδικής

Outline

- Ορισμοί Φυσιολογικής βάδισης – Χωλότητας και τύποι Χωλότητας
- Χωλό ισχίο:
  - Κλινική εξέταση – Απεικόνιση
- Αίτια - Διαφορική Διάγνωση ανάλογα με την ηλικία

ΒΑΔΙΣΗ



Φάση στήριξης (60%) - Φάση αιώρησης (40%)

5 prerequisites in gait

- Stability in stance.
- Swing phase clearance.
- Foot preposition in terminal swing.
- Adequate step length.
- Energy conservation.

ΧΩΛΟΤΗΤΑ

- Διαταραχή της βάδισης

  Συχνή στα παιδιά

  Ασυμμετρία

  +/- Πόνος, αδυναμία, παραμόρφωση, ανισοσκελία

Χωλότητα στα παιδιά

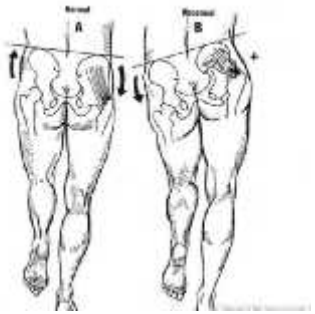
- ‘Ηπια / Σοβαρή (αδυναμία φόρτισης => κινητοποίησης)
- Οξεία ή χρόνια ή διαλείπουσα
- Προοδευτική ή αιφνίδια
- Μετατραυματική ή όχι
- Ανώδυνη ή επώδυνη

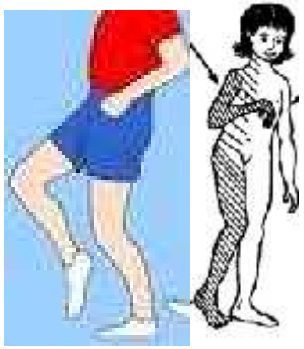
Χωλότητα

Παρατήρηση βάδισης

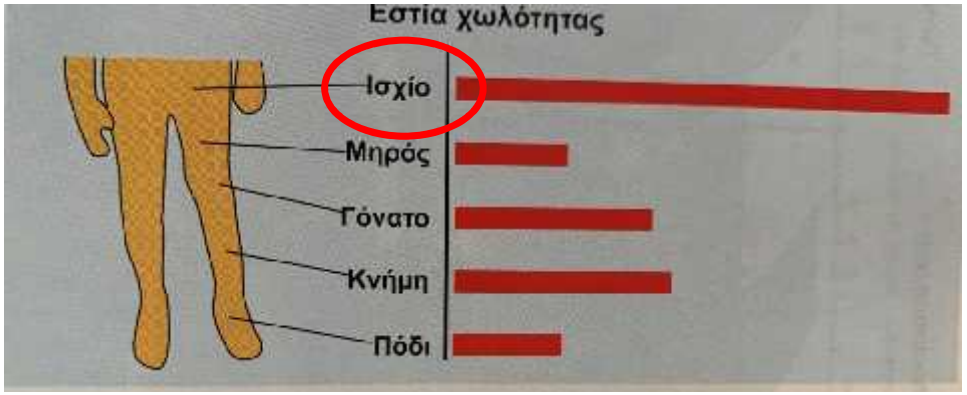
- Βράχυνση φάσης στήριξης
- Αδυναμία απαγωγών
- Βάδιση σε πτέρνες και δάκτυλα
- Περιαγωγή κατά τη φάση αιώρησης

Τύπος βάδισης	**Ανταλγική βάδιση**	**Αδυναμία απαγωγών**	**Βάδιση σε Ιπποποδία**	**Βάδιση με Περιαγωγή**
Φυσική εξέταση	Ευαισθησία Μειωμένο εύρος κίνησης	Σημείο Trendelenburg	Ρίκνωση αχίλλειου τένοντα Αναγκαία η νευρολογική εξέταση	Εξέταση μήκους ποδιών Νευρολογική εξέταση Έλεγχος εύρους κίνησης





Άλγος Ισχίου στα παιδιά



NHS

Search

Health A-Z | Live Well | Mental health | Care and support

Home > Health A to Z

Hip pain in children (irritable hip)

Hip pain in children is most often caused by a condition called irritable hip, which usually gets better on its own. But it should always be checked because it could be a sign of something serious.

Ask for an urgent GP appointment or go to A&E if:

- your child gets sudden pain in their hip, thigh or knee (hip problems can sometimes be felt in the thigh or knee)
- your child is limping or cannot put any weight on 1 leg

They may have irritable hip (inflammation of the hip joint).

Although this is painful, it is not usually serious and can get better by itself.

But they should be checked to rule out anything like a broken bone or infected joint (septic arthritis).

Επώδυνο ισχίο στα παιδιά

Χαρακτηριστικά του πόνου

Οξύς ή αμβλύς

Σε κίνηση/φόρτιση +/- Σε ηρεμία

Ακριβής εντόπιση

Διάρκεια

Ένταση

Ημερήσιος- νυκτερινός

Έναρξη συμπτωμάτων, κλπ...

- Ιστορικό τραυματισμού, πρόσφατου ταξιδιού, ιογενούς λοίμωξης ανώτερου αναπνευστικού

- ‘Άλλα συμπτώματα:
  - Πυρετός, εφίδρωση, εξάνθημα, απώλεια βάρους, εύκολη κόπωση, κακουχία, κλπ

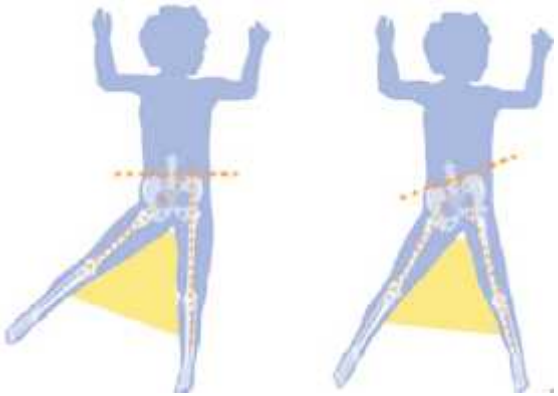
- Ατομικό αναμνηστικό (πχ. DDH, Δρεπανοκυτταρική αναιμία, Παχυσαρκία, …)

- Οικογενειακό ιστορικό (DDH, …)

ΚΛΙΝΙΚΗ ΕΞΕΤΑΣΗ ΤΟΥ ΙΣΧΙΟΥ

- Βάδιση
- Ανισοσκελία (Βράχυνση*)
- Οίδημα, ερυθρότητα, θερμότητα, εξάνθημα
- Τοπική ευαισθησία
- ΕΥΡΟΣ ΚΙΝΗΣΗΣ (ύπτια και πρηνή θέση)

  (έσω στροφή + απαγωγή)
- Σημείο Trendelenburg
- Σύγκαμψη (Προσαγωγή και κάμψη)
- Αναπήδηση (clicking/snapping)
- Νευρολογική εξέταση - Έλεγχος μυϊκής ισχύος
- Μυϊκή ατροφία (χρονιότητα)
- Σπονδυλική Στήλη
- Ειδικές κλινικές δοκιμασίες



LOG ROLL test

THOMAS test

FADIR
test

FABER
test

Απεικονιστικές εξετάσεις

- **Ακτινογραφίες**
- **US**
- **MRI**
- CT
- Bone scan

Αιματολογικός έλεγχος

Γενική αίματος

ΤΚΕ

CRP

RF…

Χωλότητα λόγω ανισοσκελίας

Αληθής (ανατομική)

(βράχυνση, παραμορφώσεις, συγγενής ή επίκτητη, αναστολή ή επιτάχυνση της ανάπτυξης)

Λειτουργική

(λοξότητα λεκάνης, συγκάμψεις, παραμελημένο ΣΕΙ,...)

Μετατραυματική (ανταλγική) χωλότητα

14 ετ. Δρομέας ταχύτητας

16 ετ. Ποδοσφαιριστής

Οξεία:

Θλάση, οστικό οίδημα, κάταγμα,

αποσπαστικό κάταγμα

Υποξεία -Χρόνια:

Αποφυσίτιδα εξ έλξεως (ASIS, **AIIS**, **IT**)

Κάταγμα εκ κοπώσεως

Για 2-4/52 αρνητικός ο ακτινολογικός έλεγχος

MRI (ή bone scan)

Giordano BD. Assessment and treatment of hip pain in the adolescent athlete. Pediatr Clin North Am. 2014:1137-54.

ΣΗΠΤΙΚΗ ΑΡΘΡΙΤΙΔΑ ΙΣΧΙΟΥ

- Αιματογενής διασπορά

- **Επείγουσα αντιμετώπιση**

Παρακέντηση - Αρθροτομή και διέκπλυση της άρθρωσης, αντιβίωση

- καθυστερημένη διάγνωση : Κακή πρόγνωση!

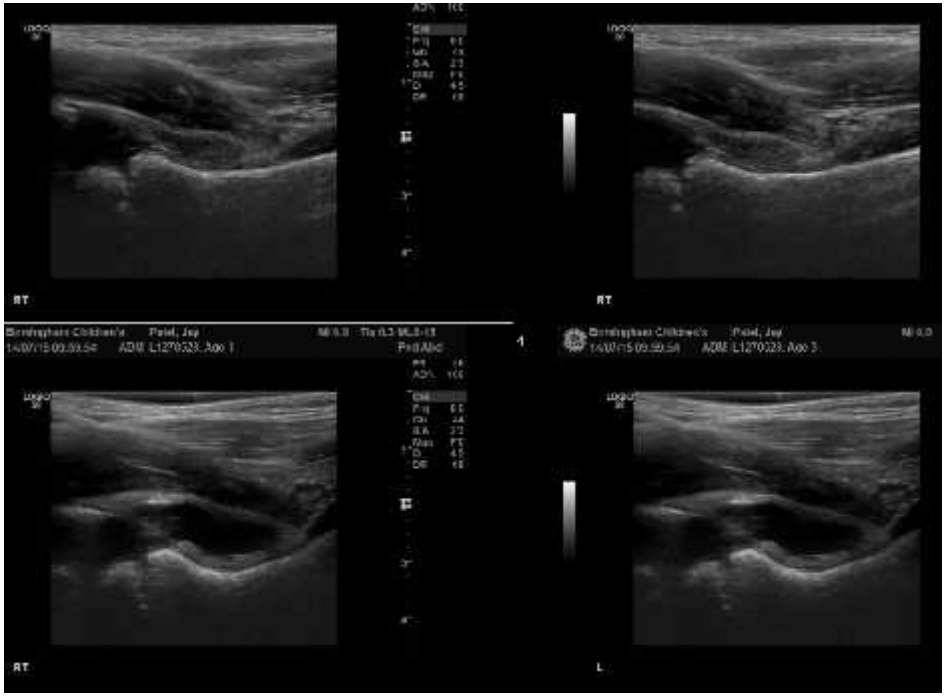
- **χωλότητα**, περιορισμός ROM, αδυναμία φόρτισης

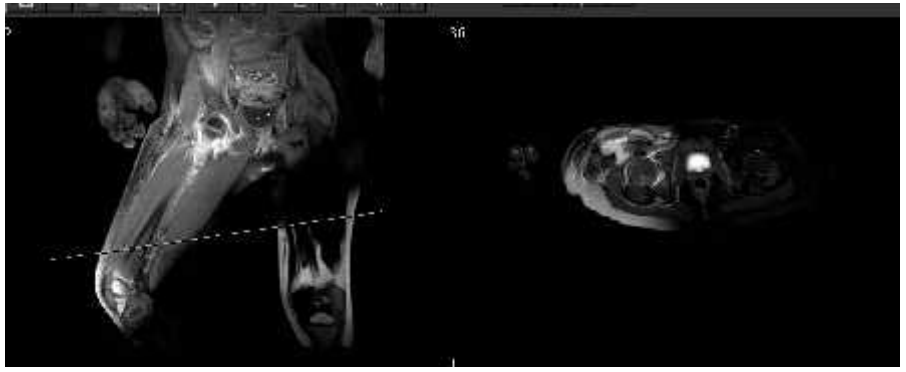
  Ισχίο:Κάμψη, απαγωγή, έξω στροφή

- Α/α : Ø (υπεξάρθρημα, ΟΜ)

- US + παρακέντηση + αρθροτομή

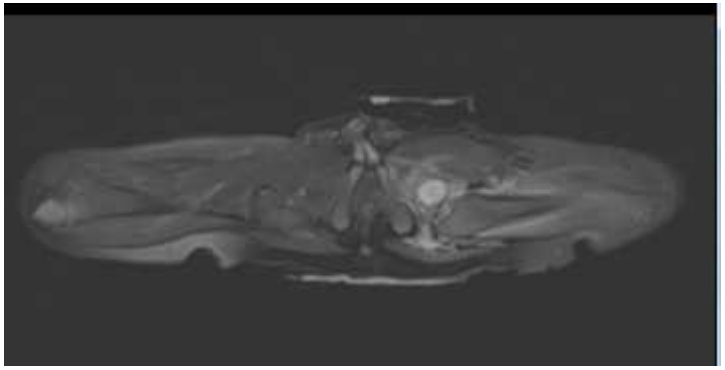
- Κ/α αρθρικού υγρού, Gram χρώση

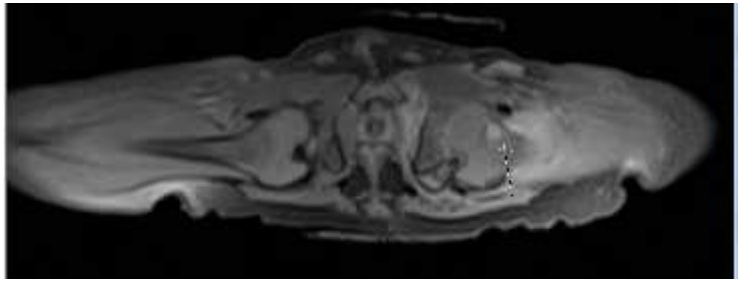




Σ.Α.: προσβολή μίας άρθρωσης

≤ 10% Σ.Α. και οστεομυελίτιδα





Κριτήρια Kocher

1. Πυρετός >38.5^{0}C
2. ΤΚΕ >40 mm/hr (CRP)
3. WBC > 12.000/mm^3
4. Αδυναμία φόρτισης

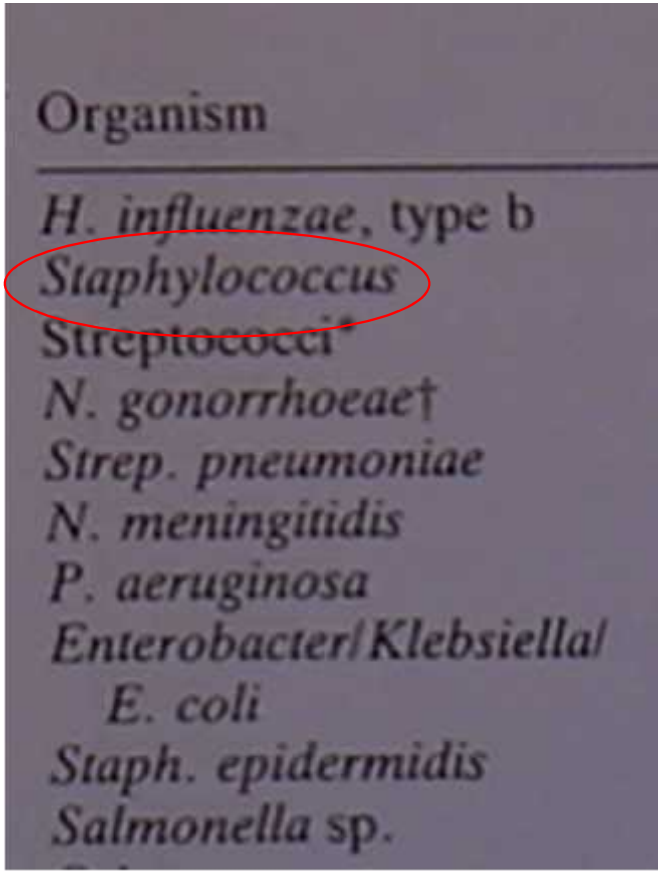
4/4: 99,6%:

3/4: 93-95%

2/4: 33,8-62,2%

1/4: 2,1-5,3%

0/4: 0,1%



Organism
H. influenzae, type b
Staphylococcus
Streptococci*
N. gonorrhoeae†
Strep. pneumoniae
N. meningitidis
P. aeruginosa
Enterobacter/Klebsiella/ E. coli
Staph. epidermidis
Salmonella sp.

… Kingela Kingae

Κ/α: αρνητική!

PCR

ΟΣΤΕΟΜΥΕΛΙΤΙΔΑ

J Pediatr Orthop. May/Jun 2019;39(5):268-274. doi: 10.1097/BPO.0000000000000934.

Predicting Periarticular Infection in Children With Septic Arthritis of the Hip: Regionally Derived Criteria May Not Apply to All Populations

Christian A Rehakis [1], Alexandre Arkader, Keith D Baldwin, David A Spiegel, Wudbhav N Sankar

… Rosenfeld criteria for predicting the presence of PAI with the goal of using magnetic resonance imaging (MRI) efficiently in the workup of septic arthritis.

MRIs: 43%
Coexisting osteomyelitis was revealed in 35% of MRIs *+/- coexisting intramuscular abscesses*

Overall, **advanced imaging changed management in 9%** of patients

> Spine Deform. 2020 Oct;8(5):1001-1008. doi: 10.1007/s43390-020-00110-8. Epub 2020 Apr 18.

Diagnosing and treating native spinal and pelvic osteomyelitis in adolescents

Lane L Cohen [1], Benjamin J Shore [1, 2], Kathryn A Williams [1], Daniel J Hedequist [1, 2], M Timothy Hresko [1, 2], John B Emans [1, 2], Lawrence I Karlin [1, 2], Brian D Snyder [1, 2], Michael P Glotzbecker [3, 4]

Affiliations + expand

PMID: 32306283 DOI: 10.1007/s43390-020-00110-8

The majority of patients reported back pain (20/29, 69%) and fever (18/29, 62%) before diagnosis. Other common symptoms included hip pain (11/29, 38%), difficulty walking or gait changes (11/29, 38%), leg pain (8/29, 28%), vomiting (4/29, 14%), and weight loss (3/29, 10%). Patients with pelvic osteomyelitis were more likely to experience fever (5/5, 100%), hip pain (4/5, 80%), and leg pain (3/5, 60%). They were less likely to experience back pain (1/5, 20%) and weight loss (0/5). Difficulty walking presented as refusal to walk or need for supported walking after independent walking had been achieved in younger patients. The youngest patient in the cohort (1.19 years) presented with decreased crawling.

ΠΥΟΜΥΟΣΙΤΙΔΑ

↑ επίπτωση

Δδ: **Σηπτική αρθρίτιδα**
Παροδική υμενίτιδα

Fig. 1

Coronal magnetic resonance imaging scan depicting pyomyositis of the right gluteus maximus with abscess formation and minimal fluid in the hip joint.

Fig. 2

Axial magnetic resonance imaging scan demonstrating pyomyositis of the left obturator internus muscle.

Wong-Chung et al. Physical signs in pyomyositis presenting as a painful hip in children: a case report and review of the literature. J Pediatr Orthop B. 2004;13(3):211-3.

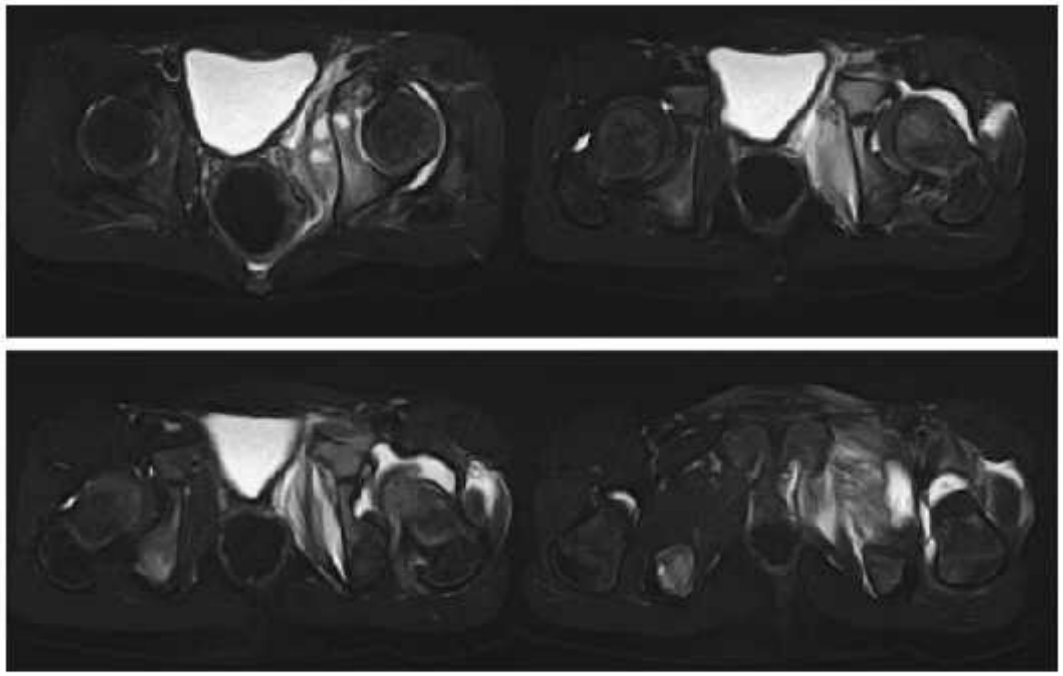
Pyomyositis of the obturator internus muscle extending to septic arthritis of the hip in a child: a case report

Rui Amari and Hiromichi Yokoi

We report a case of primary pyomyositis in the obturator

Journal of Pediatric Orthopaedics B 2014, 23:55–58

9-year-old girl
initially treated as acute appendicitis



Axial T2-weighted fat saturation showing inflammatory masses and signal abnormality involving the left obturator internus muscle, obturator externus muscle, gluteus minimus muscle, and pectineus muscle.

TABLE 1. **Age-specific Diagnosis in Patients Presenting With a Limp**

TODDLER (<3 YEARS)	CHILD (3–10 YEARS)	ADOLESCENT (>10 YEARS)
Developmental dysplasia of the hip	Legg-Calvé-Perthes disease	Slipped capital femoral epiphysis
Congenital limb deficiencies	Stress fractures	Legg-Calvé-Perthes disease
Neuromuscular abnormalities	Tumors	Juvenile idiopathic arthritis
Painful gait	Osteochondrosis	Overuse syndromes
Toddler fracture	Kohler disease	Osteochondrosis
Septic arthritis	Osteochondritis dissecans	Tumors
Reactive arthritis	Osgood-Schlatter disease	Osteochondritis dissecans
Transient synovitis	Transient synovitis	Stress fractures
Osteomyelitis	Osteomyelitis	Tarsal coalition
Foreign object in knee or foot	Leg-length discrepancy	Discoid meniscus

Leukemia

Herman M and Martinek M. The limping child. Pediatrics in Review 2015;36;184-197.

TABLE 1. Age-specific Diagn

TODDLER (<3 YEARS)
Developmental dysplasia of the hip
Congenital limb deficiencies
Neuromuscular abnormalities
Pantufflegait
Toddler fracture
Septic arthritis
Reactive arthritis
Transient synovitis
Osteomyelitis
Foreign object in knee or foot

- **<u>1-3 ετών</u>**

ΟΜ/ΣΑ

Παροδική υμενίτιδα

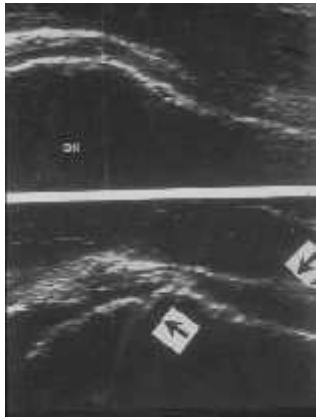
DDH

Νεοπλασίες
(Ewing sarcoma, osteoid osteoma, λευχαιμία, νευροβλάστωμα)

CHILD (3–10 YEARS)
Legg-Calvé-Perthes disease
Stress fractures
Tumors
Osteochondrosis
Kohler disease
Osteochondritis dissecans
Osgood-Schlatter disease
Transient synovitis
Osteomyelitis
Leg-length discrepancy

- **3-10 ετών**

Παροδική υμενίτιδα (“irritable hip”)



Perthes

Παροδική υμενίτιδα του ισχίου

- **<u>Δδ από Σηπτική αρθρίτιδα</u>**
- Διάγνωση εξ αποκλεισμού ...
- Χωλότητα ανταλγική (+/- αδυναμία φόρτισης)
- Πόνος στο ισχίο, γόνατο, μηρό
- ↓ ROM

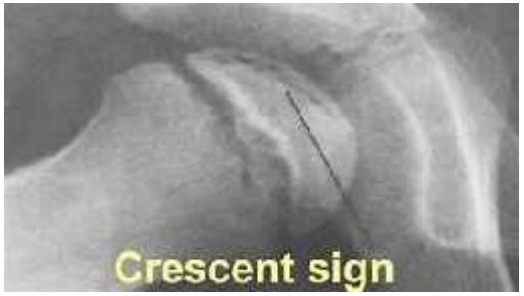
  - Αποφόρτιση/κλινοστατισμός και ΜΣΑΦ
  - +/- υπό US παρακέντηση του ισχίου

Legg-Calve-Perthes

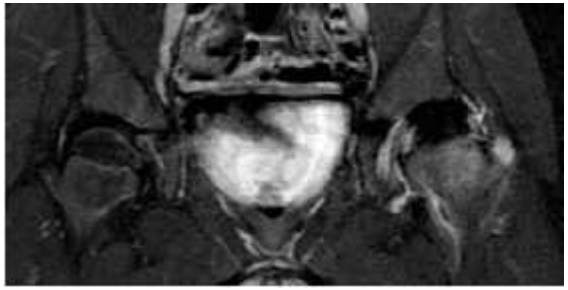
- Ιδιοπαθής οστεοχονδρίτιδα της μηριαίας κεφαλής / άσηπτη νέκρωση
- 1: 10.000
- **4-8** (12) **ετών**
- M/F = 4-5:1
- **Χωλότητα με ή χωρίς πόνο στο ισχίο ή στην πρόσθια επιφάνεια του μηρού και του γόνατος.** Περιορισμός της απαγωγής και της έσω στροφής
- <u>Άμφω 10-15% (σε διαφορετικό στάδιο!)</u>
  - Δδ: Meyer's dysplasia

Απεικονιστικός έλεγχος

- Απλές ακτινογραφίες



- Υπερηχογράφημα
- MRI
- Αρθρογράφημα (hinged abduction)
- Αξονική τομογραφία (προεγχειρητικός σχεδιασμός)



Du et al. MR perfusion index as a quantitative method of evaluating epiphyseal perfusion in Legg-Calve-Perthes disease and correlation with short-term radiographic outcome: a preliminary study. J Pediatr Orthop 2013;33(7):707-13

- 4 στάδια:
  - Υμενίτιδα (εβδομάδες): δυσκαμψία και πόνο
  - Νέκρωση / collapse (6-12 μήνες)
  - Κατακερματισμός (1-2 έτη)
  - Re-ossification - remodelling

ADOLESCENT (>10 YEARS)
Slipped capital femoral epiphysis
Legg-Calvé-Perthes disease
Juvenile idiopathic arthritis
Overuse syncromes
Osteochondrosis
Tumors
Osteochondritis dissecans
Stress fractures
Tarsal coalition
Discoid meniscus

- **11-16 ετών**

Επιφυσιολίσθηση (SCFE)

<u>Σύνδρομα «υπέρχρησης»</u>

<u>Αποσπαστικά κατάγματα</u>

DDH*

Επιφυσιολίσθηση μηριαίας κεφαλής

Χωλότητα
Πόνος (ισχίο, μηρός, γόνατο)
Έξω στροφή

Ενδοκρινολογικός έλεγχος*

Ακτινολογικός έλεγχος

MRI: Pre-op / Pre-Slip

Skeletal Radiol (2002) 31:362–365
DOI 10.1007/s00256-002-0497-9

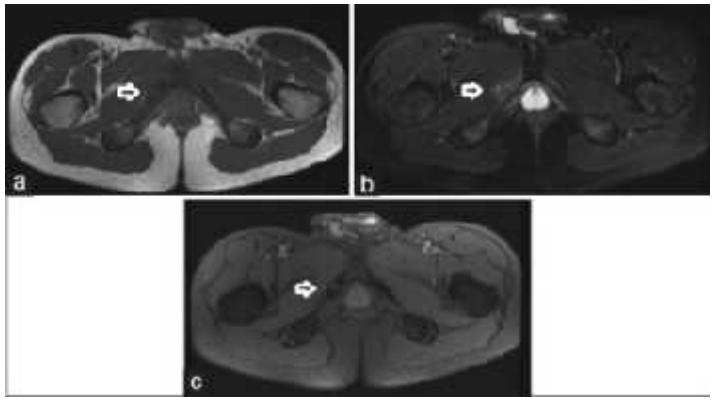
CASE REPORT

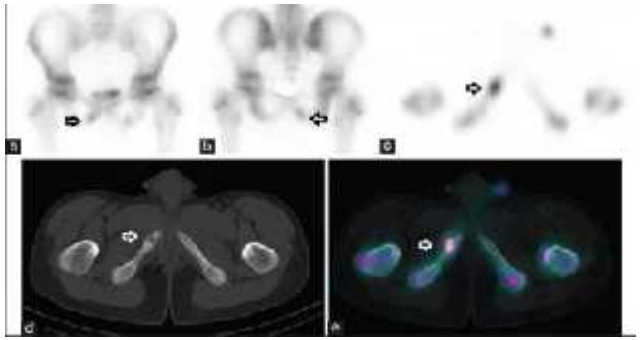
A. Lalaji
H. Umans
R. Schneider
D. Mintz
M.S. Liebling
N. Haramati

MRI features of confirmed "pre-slip" capital femoral epiphysis: a report of two cases

ning. In both cases MRI demonstrated distortion of the physis and/or peri-physeal bone marrow edema before the development of radiographically detectable SCFE.

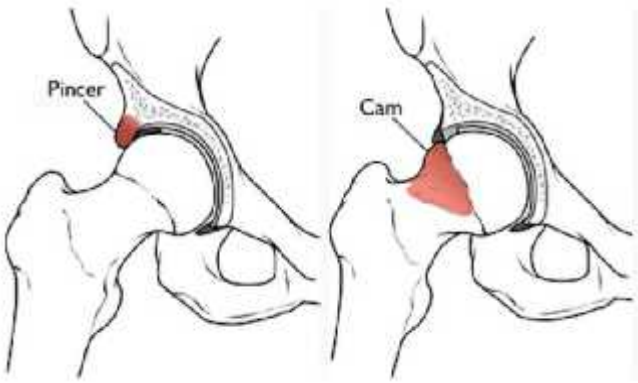
- Van Neck-Odelberg disease (ischiopubic osteochondritis) 4-16 yrs



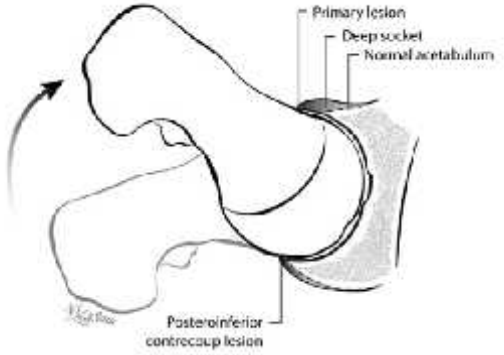


Camacho et al. Van Neck-Odelberg disease: A rare cause of pain in pediatric pelvis. World J Nucl Med. 2020;19(4): 435–437.

Σύνδρομο κοτυλομηριαίας πρόσκρουσης
Femoroacetabular Impingement (FAI)



- Εγγύς μηριαίο (**Cam**) (SCFE, μτχ)
- Κοτύλη (**Pincer**) (retroversion της κοτύλης, “βαθειά κοτύ
μτχ οστ.)
- Μεικτή παθολογία



Προοδευτική χόνδρινη/οστεοχόνδρινη βλάβη λόγω πρόσκρουσης

Review > Curr Opin Pediatr. 2016 Feb;28(1):68-78. doi: 10.1097/MOP.0000000000000301.

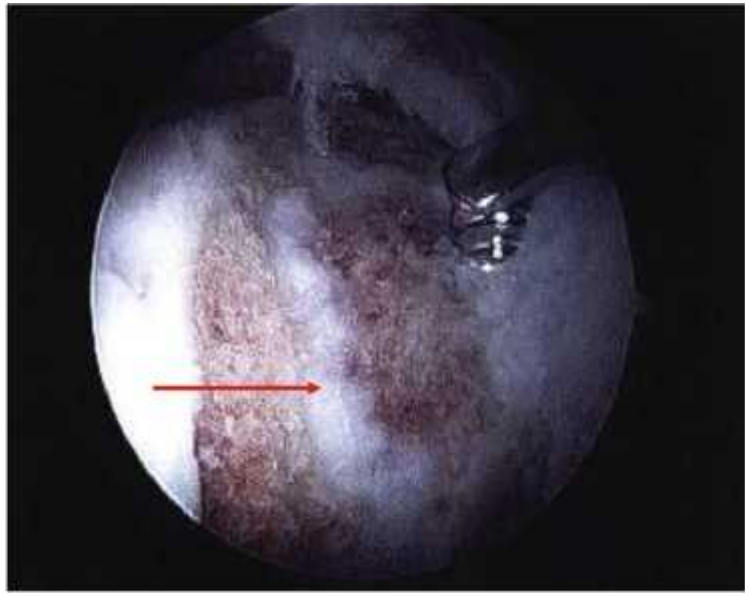
Femoroacetabular impingement in children and adolescents

Rubini Pathy, Ernest L Sink

Affiliations + expand

PMID: 26709602 DOI: 10.1097/MOP.0000000000000301

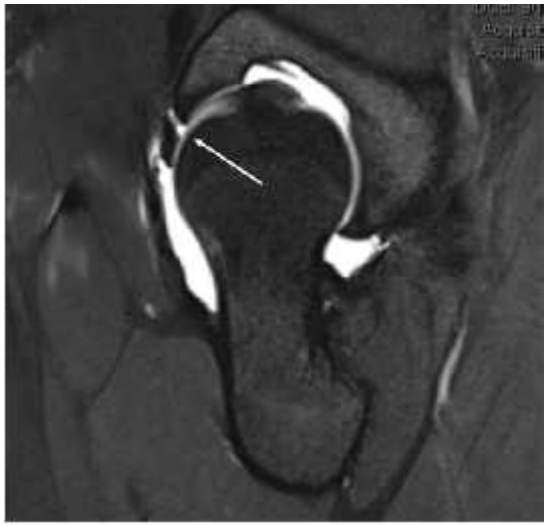
Summary: FAI is a source of pediatric hip pain and can occur primarily or secondarily. It is characterized by anterior hip pain, made worse with flexion activities, decreased hip internal rotation, and a positive impingement sign. Pathologic values for radiographic measures of FAI are not clearly defined in the pediatric population. As FAI is a risk factor for osteoarthritis, early intervention in specific patients may be indicated. Hip arthroscopy, surgical hip dislocation, or combined mini-open and arthroscopic approaches are utilized, with good to excellent short, and mid-term functional results. Further study is required in the pediatric population to identify potential preventive strategies, to delineate the pathologic radiographic values of FAI, to define specific indications for operative management, and to examine long-term outcomes to determine optimal management.



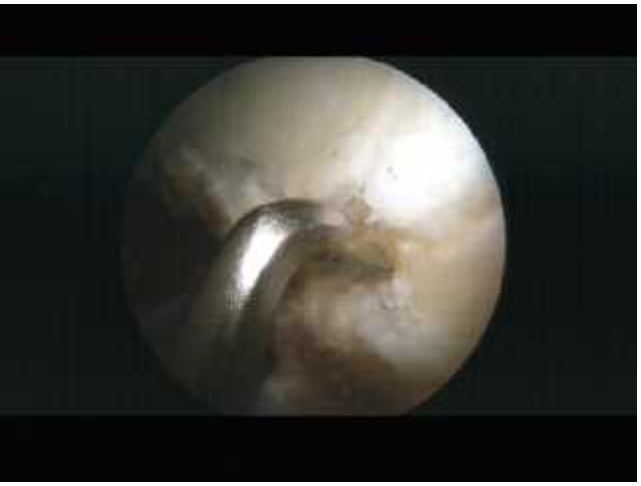
Giordano B. Assessment and Treatment of Hip Pain in the Adolescent Athlete. Pediatr Clin N Am 61 (2014) 1137–1154.

Ρήξεις του επιχείλιου χόνδρου

- Μετά από τραυματισμό
- Σε αθλητές συγκεκριμένων αθλημάτων
- Σύνδρομο πρόσκρουσης ή δυσπλασία της κοτύλης, retroversion της κοτύλης ή του εγγύς μηριαίου



- MRI
- Υψηλής ευκρίνειας US: βλάβες του επιχείλιου χόνδρου



Αρθροσκόπηση

DEBRIDEMENT vs REPAIR

› Hip Int. Jan-Mar 2009;19 Suppl 6:S35-45. doi: 10.1177/1120700009019060S07.

Tumours and tumour-like lesions of the hip in the paediatric age: a review of the Rizzoli experience

P Ruggieri [1], A Angelini, M Montalti, E Pala, T Calabrò, G Ussia, C N Abati, M Mercuri

Bone tumours and tumour-like lesions of the hip in children are **rare**.

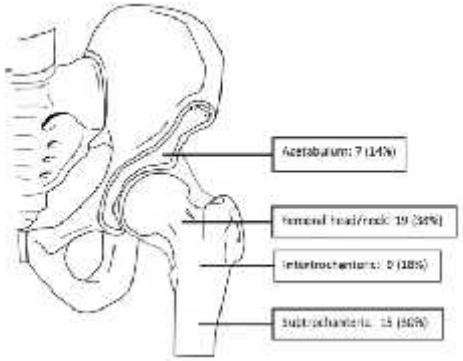
Signs and symptoms of these tumours are generally nonspecific.

Delay of diagnosis is not uncommon.

A high index of suspicion in young patients presenting with **persistent pain and without history of trauma, that is unresolved with conservative therapy** should prompt further investigation.
(mean 9 years, ranged from 6 months to 14 years)

752 tumours and tumours-like lesions occurred in the pelvis or proximal femur, involving the hip:
simple bone cyst, eosinophilic granuloma, aneurismal bone cyst, osteoid osteoma, fibrous dysplasia, exostosis and malignant tumours (Ewing's sarcoma and osteosarcoma).

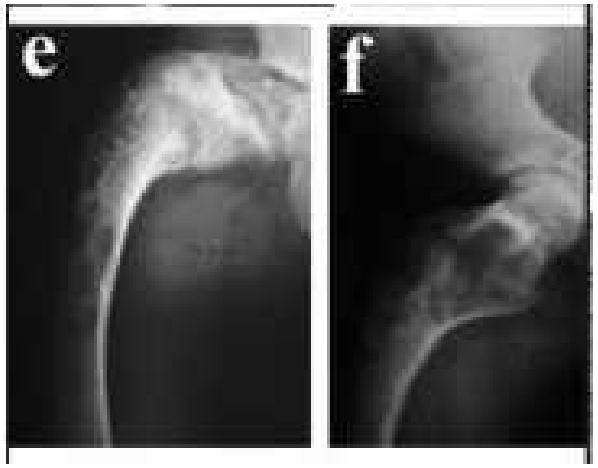
Οστεοειδές οστέωμα



- Χαρακτηριστικός νυκτερινός πόνος
- ΜΣΑΦ
- Χωλότητα
- ≈ 50% Α/α
- CT/MRI
- RFA
- Καθυστερημένη διάγνωση...
  - Αρχικη δδ FAI

Collin J May et al. Osteoid Osteoma About the Hip in Children and Adolescents. J Bone Joint Surg Am . 2019;101(6):486-49.

Ινώδης Δυσπλασία



Χονδροβλάστωμα

> J Bone Joint Surg Br. 2001 Sep;83(7):988-95. doi: 10.1302/0301-620x.83b7.10779.

The hip in hereditary multiple exostoses

D F Porter [1], M K Benson, G A Hosney

Fig. 10

AP pelvic radiograph of a patient with HME showing dysplastic acetabuli, potential impingement of the medial neck, lateral subluxation and small periacetabular osteochondromas.

› Hip Int. Jan-Mar 2009;19 Suppl 6:S35-45. doi: 10.1177/1120700009019060S07.

Tumours and tumour-like lesions of the hip in the paediatric age: a review of the Rizzoli experience

P Ruggieri [1], A Angelini, M Montalti, E Pala, T Calabrò, G Ussia, C N Abati, M Mercuri

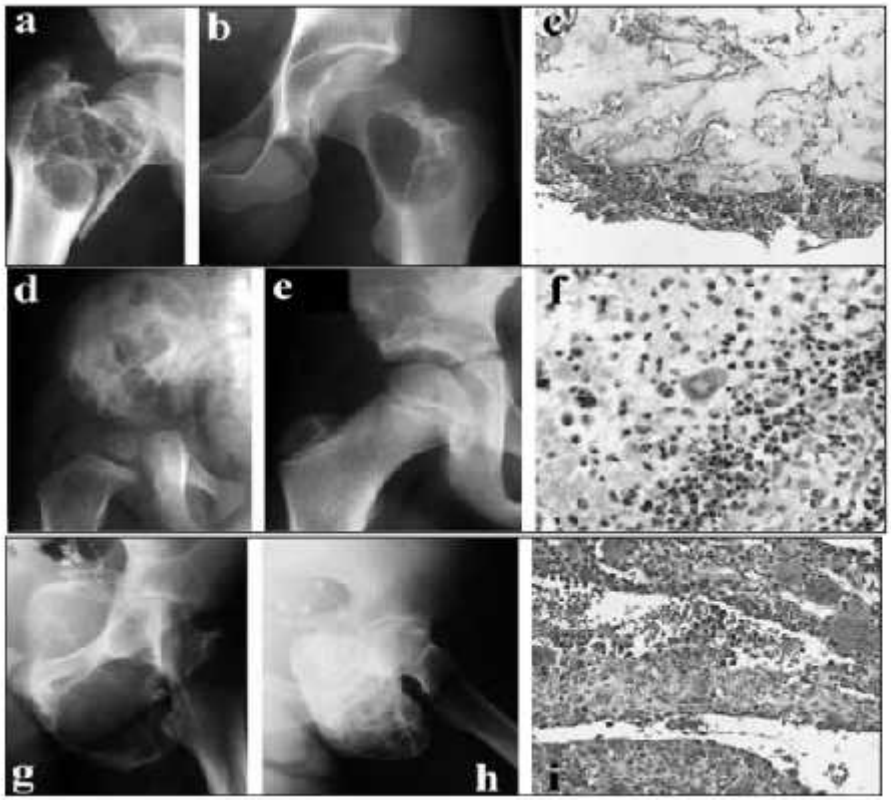


Fig. 1 - *Tumour-like lesions.* **a.** *A-P view of the right hip shows a pathologic fracture in a child (5 year-old male) with a simple bone cyst.* **b.** *Simple bone cyst involving the neck of the femur in a 12 year-old female.* **c.** *Histologic pattern of simple bone cyst: thin membrane of loose fibrous tissue, lipocular or fibrillar matrix, fibrin-like material surrounded by bone formation.* **d.** *Radiographs of an eosinophilic granuloma in a 4 year-old male and* **e.** *after steroid injection.* **f.** *Histologic pattern of eosinophilic granuloma, with a background of large histiocytes and areas with mixed inflammatory cells (eosinophiles, neutrophiles and lymphocytes). In the center there is a newly-formed blood vessel.* **g.** *Large aneurysmal bone cyst of the pelvis before treatment and* **h.** *after selective arterial embolization.* **i.** *Histology shows multiloculated cystic spaces filled with blood interspaced with solid areas of benign appearing fibrous tissue.*

› Hip Int. Jan-Mar 2009;19 Suppl 6:S35-45. doi: 10.1177/1120700009019060S07.

Tumours and tumour-like lesions of the hip in the paediatric age: a review of the Rizzoli experience

P Ruggieri [1], A Angelini, M Montalti, E Pala, T Calabrò, G Ussia, C N Abati, M Mercuri

Fig. 3 - *Malignant tumours.* ***a, b, c****. Ewing's sarcoma of the pelvis with extraosseous estension.* ***d, e****. Good response after chemoteraphy.* ***f****. Histology of Ewing's sarcoma: uniform mat of small round cells with nuclei intensely stained.* ***g, h****. High grade osteosarcoma involving the proximal femur in a 14 –year-old female. The lesion involves the surrounding soft tissues.* ***i****. Histology shows sarcomatous tissue producing osteoid, pleomorphic and hyperchromic cells.*

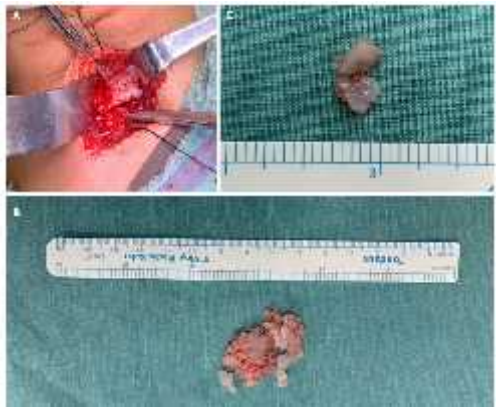
Λαχνοοζώδης υμενίτιδα (PVNS)

Indications for Hip Arthroscopy. Sports Health. 2017;9(5):402-413.

Case Reports > World J Clin Cases. 2022 Jan 14;10(2):685-690. doi: 10.12998/wjcc.v10.i2.685.

Synovial chondromatosis of the hip joint in a 6 year-old child: A case report

Kun-Bin Yi [1], Hao-Li Gong [1], Djandan Jadum Arthur [1], Jie Wen [2], Sheng Xiao [1], Zhong-Wen Tang [1], Teng Xiang [1], Kong-Jian Wang [1], Zhen-Qi Song [1]

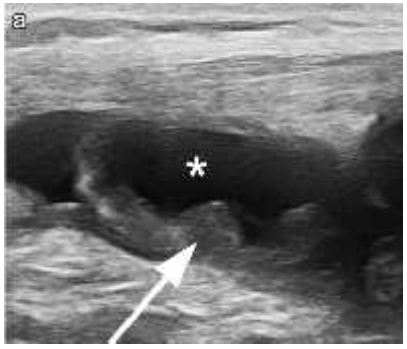


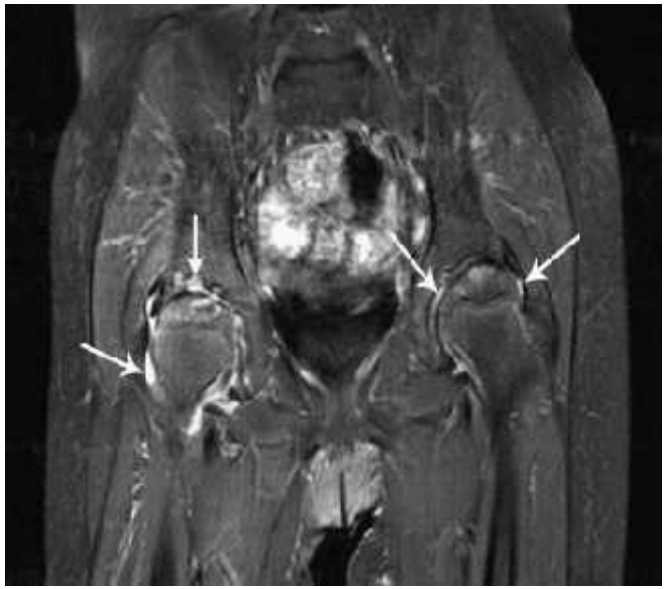
Φλεγμονώδεις παθήσεις

Νεανική ρευματοειδής αρθρίτιδα (JIA)

- Χωλότητα
- Πόνος/αρθραλγίες
- Οίδημα
- Πρωινή δυσκαμψία * (άρνηση/πιο έντονη χωλότητα)

> 6 εβδ.





Νεανική ρευματοειδής αρθρίτιδα (JIA)

ΙΣΧΙΟ: προσβολή σε 35–63%
(Συστηματική πολυαρθρική μορφή)

Fig. 3 Comparative ultrasound and radiographic imaging in a 9-year-old boy with polyarticular juvenile idiopathic arthritis demonstrates subtle findings shown on sonographic assessment. **a** A longitudinal sonogram of the right hip joint anteriorly reveals increased synovial thickening with capsule-femoral neck distance of 8 mm (between calipers), and a focal erosion at the proximal femoral metaphysis (arrowhead). **b** Colour Doppler imaging of this region does not reveal any synovial hyperaemia. **c** The anteroposterior pelvic radiograph performed within 3 months of the ultrasound did not demonstrate any abnormality

Fig. 1 Changes in hip radiographic appearances over time in the same boy with polyarticular juvenile idiopathic arthritis. **a** Anteroposterior pelvic radiograph in an 8-year-old boy demonstrates enlarged fovea bilaterally (arrowheads). **b** Radiograph of the pelvis at age 10 reveals bilateral proximal femoral epiphyseal sclerosis, with erosive changes more predominantly affecting the right femoral head and loss of femoral epiphyseal height. **c** A radiograph of the pelvis at age 13 demonstrates further irreversible destruction with bilateral loss of joint space, further erosive changes, shortening of the femoral neck distance and superolateral displacement of the left hip joint

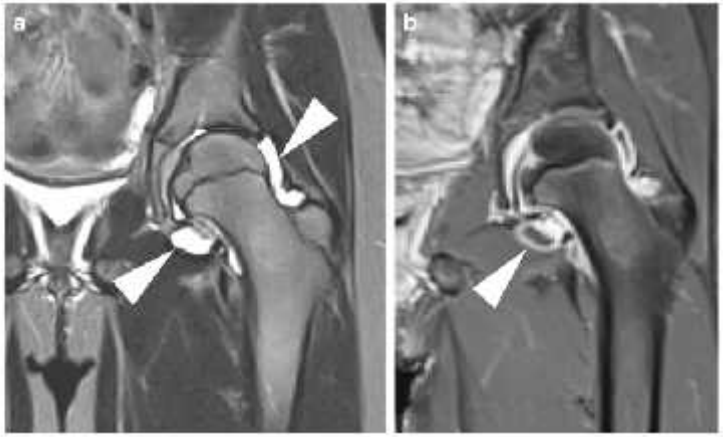


Fig. 4 Pelvic MRI study in an 11 year old girl with polyarticular juvenile idiopathic arthritis and left hip pain at initial diagnosis. **a** Coronal short tau inversion recovery (STIR) spin echo sequence reveals high signal abnormality (arrowheads) in the left hip joint. **b** Post-contrast coronal T1-weighted fat-saturated images show that this predominantly represents a left hip joint effusion, with enhancement of the mildly thickened synovium (arrowhead)

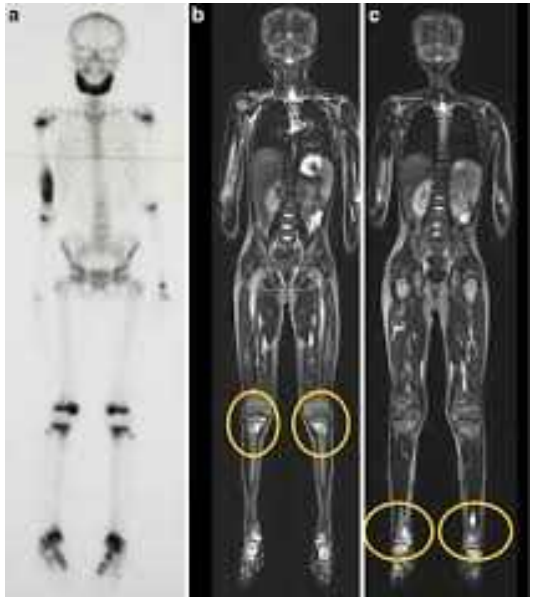
Roderick et al. Pediatric Rheumatology (2016) 14:47
DOI 10.1186/s12969-016-0109-1

Pediatric Rheumatology

SHORT REPORT Open Access

Chronic recurrent multifocal osteomyelitis (CRMO) – advancing the diagnosis

M. R. Roderick[1,2*], R. Shah[2], V. Rogers[2], A. Finn[1,3] and A. V. Ramanan[2]



Χρονια Μη Βακτηριακη Οστεομυελιτιδα/Οστεϊτιδα

- 9 ετών (1–13)
- Καθυστερημένη διάγνωση 15 μήνες (1–92).

- Κνήμη , κλείδα, ΣΣ, **μηριαίο, λεκάνη**

- πόνος , χωλότητα, +/- Πυρετός , κακουχία
- Δδ: ΟΜ, κακοήθεια (Ewing's), ιστιοκύττωση Langerhans, JIA.

Οστεονέκρωση

Neel M et al. Osteonecrosis of the Femoral Head in Pediatric Cancer Patients. Seminars in Arthroplasty 2007; 203-210.

SonataVision
Ex : 1 Se : 2
Im : 10 / 21
Pos : 22,9
0,92 x
ACC : 284550
18/02/2021, 17:27:39
R
L
13cm
TR : 5000,00 ms
TE : 27,00 ms
ST : 4,0, SP : 4,4
WW : 682 WC : 312
FOV : 29,0 x 35,0
Acq.Matr : 256 x 212
424 x 512
tl_tirm_sag

ΔΡΕΠΑΝΟΚΥΤΤΑΡΙΚΗ ΑΝΑΙΜΙΑ – AVN

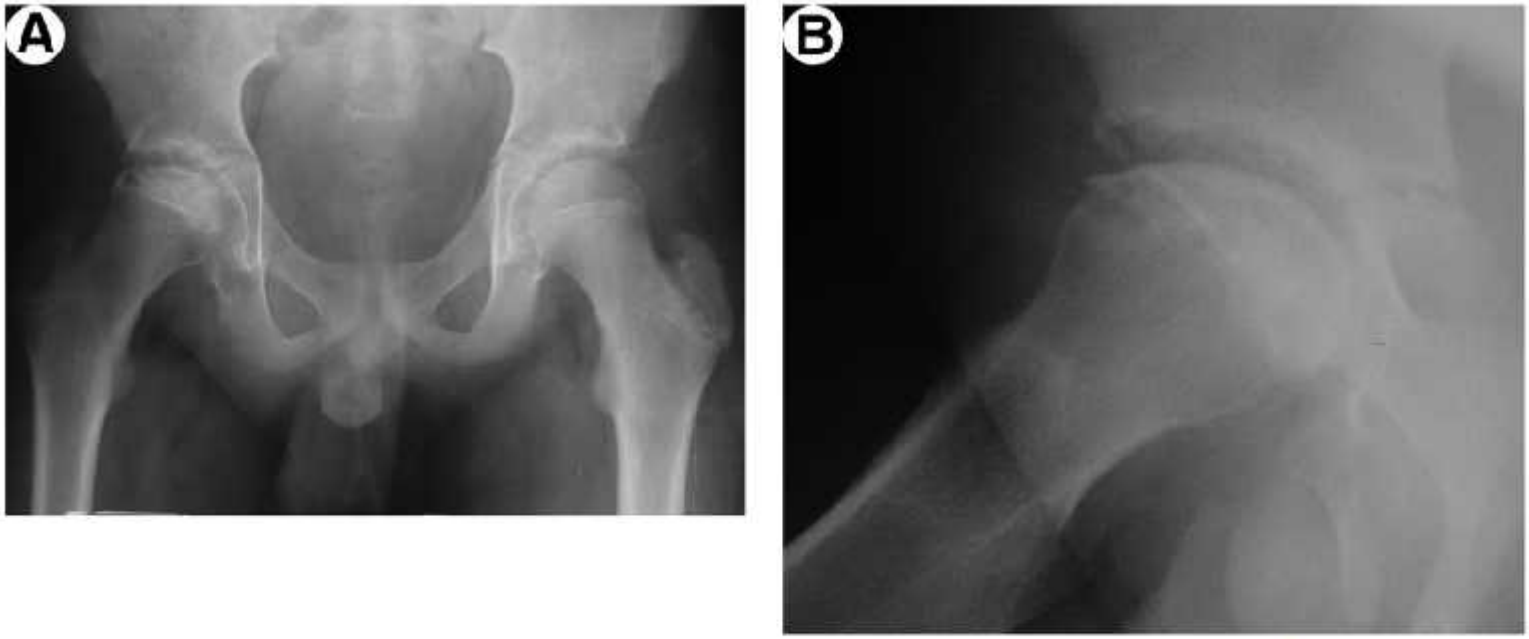


Figure 5 Anterior–posterior (A) and frog leg lateral (B) radiographs of a 13-year-old male with sickle cell disease and osteonecrosis of the right femoral head. Note subchondral collapse and open physes.