



CENTRE DE BIOLOGIE ET DE MEDECINE DU SPORT DE PAU
France

GROIN INJURIES IN SPORT TREATMENT STRATEGIE

**Revue of literature and proposal of a
protocol of rehabilitation**

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Groin Injuries in sport is not une pathologie du passé

Incidence

Nielsen 89 (soccer)	18%
Irshad 97 (hockey)	20%
Gibbon 99 (n= 2335, soccer)	24%

Recurrence

Gibbon 99	28,5%
Tyler (hockey)	44%
Orchard 2002 (australian football)	22%



Groin Injuries in sport is not une pathologie du passé

* Le Gall 93 (n= 314) délai de reprise moyen de 4 months $\frac{1}{2}$

* Gibbon 99 (n= 2335, soccer)

22-27 match-joueurs manqués/club/saison

Arrêt ≥ 4 matchs en moyenne par épisode

* Orchard 2002 (australian football, n=58000)

12 matchs-joueurs manqués par club et par saison



A recent bibliography study put in evidence the universal character and also the absence of a consensus nowadays as on a nosological as on a therapeutical point of view 20 years after the first Classifications (Durey et Rodineau 76, Brunet 83)

Christel P. et coll. EMC, 1997

Gilmore J., Clin.Sports Med., 1998

Morelli, Am. Family Physician, 2001

Nicholas SJ., Tyler TF., Sports Med., 2002

Gibbon W.W., Br.J.Sports Med., 1999

2335 professionnels soccer playeurs, 92 clubs

Inguinal Forms 22% en England

4% rest of the western europe



Pubalgia in Athletes

Une pathologie du carrefour

Associated Forms



	Volpi 92	Syme 99	LeGall 93	Arezki 91	Ghébotni 96	Gibbon 99
N=	48	124	214	70	22	47
TYPE	Clinic.	Clinic	Clinic	Clinic	IRM	IRM
%	25	35	40	85	14	15



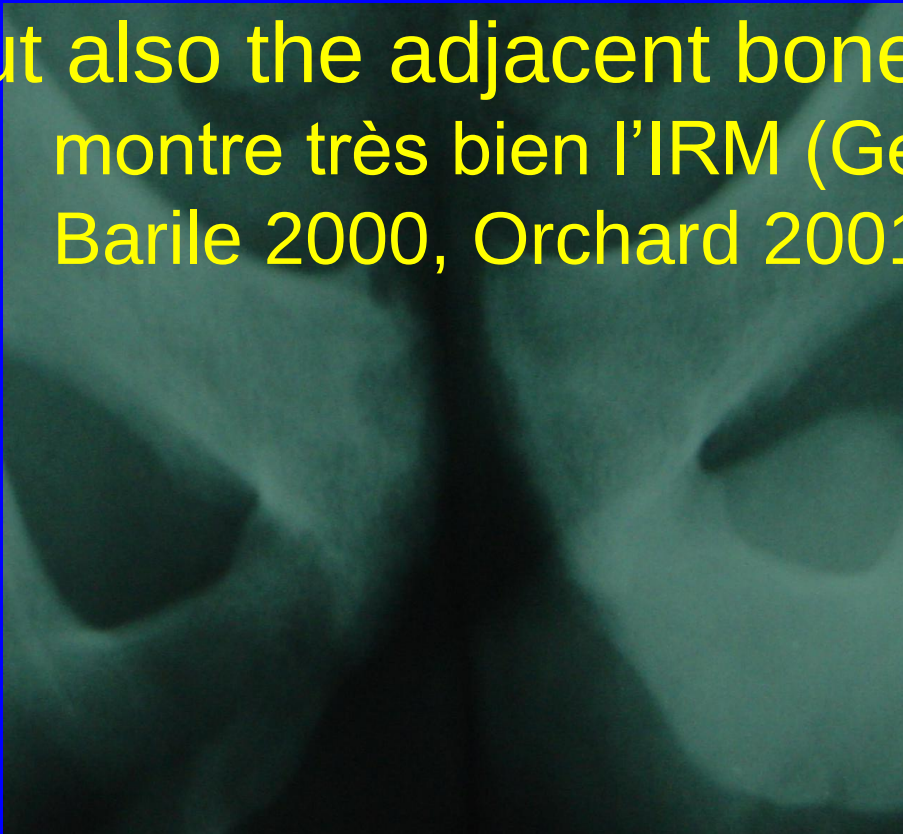
Pubalgia in Athletes

an only pathology which appears with a painful syndrome, frequently recurrent, in the Pubic zone caused by a sport effort (Durey 84). It concerns the couple Bone-Tendon (Orchard 2001) and regroups isolately or in association 4 clinical forms



I – The Pubic Osteoarthropaty

Witch concerns the symphysis articulation avec des signes radiologiques décrits anciennement but also the adjacent bone parts. comme le montre très bien l'IRM (Gebothni et Roger 96, Barile 2000, Orchard 2001)





II - The pains of the inguinal Canal (Nesovic) called incorrectly “Sports hernia”

These sufferings include the pains caused by defaults of the wall on the posterior part of the inguinal canal.

reconnue par de nombreux chirurgiens et par 2
types d'examens complémentaires

(Orchard J. et coll. Groin pain associated with **ultrasound finding** of inguinal canal posterior wall deficiency in Australian Rules footballers. Br.J.Sports Med., 1998.

Ekberg O., Inguinal **herniography** in adults. Radiology 1981.

Smedberg SG et coll., **Herniography** in athletes with groin pain. Am.J.Surg., 1985.

and anterior part of the inguinal canal

(Irschad K. hockey groin syndrome” : 12 years of experience in Naional Hockey League players, Surgery, 2001).

but also the secondary pains caused by compression of the ilio-inguinal nerve (Fon 2000, Irschad 2001, Morelli 2001, Orchard 2002, Srinivasan 2002)

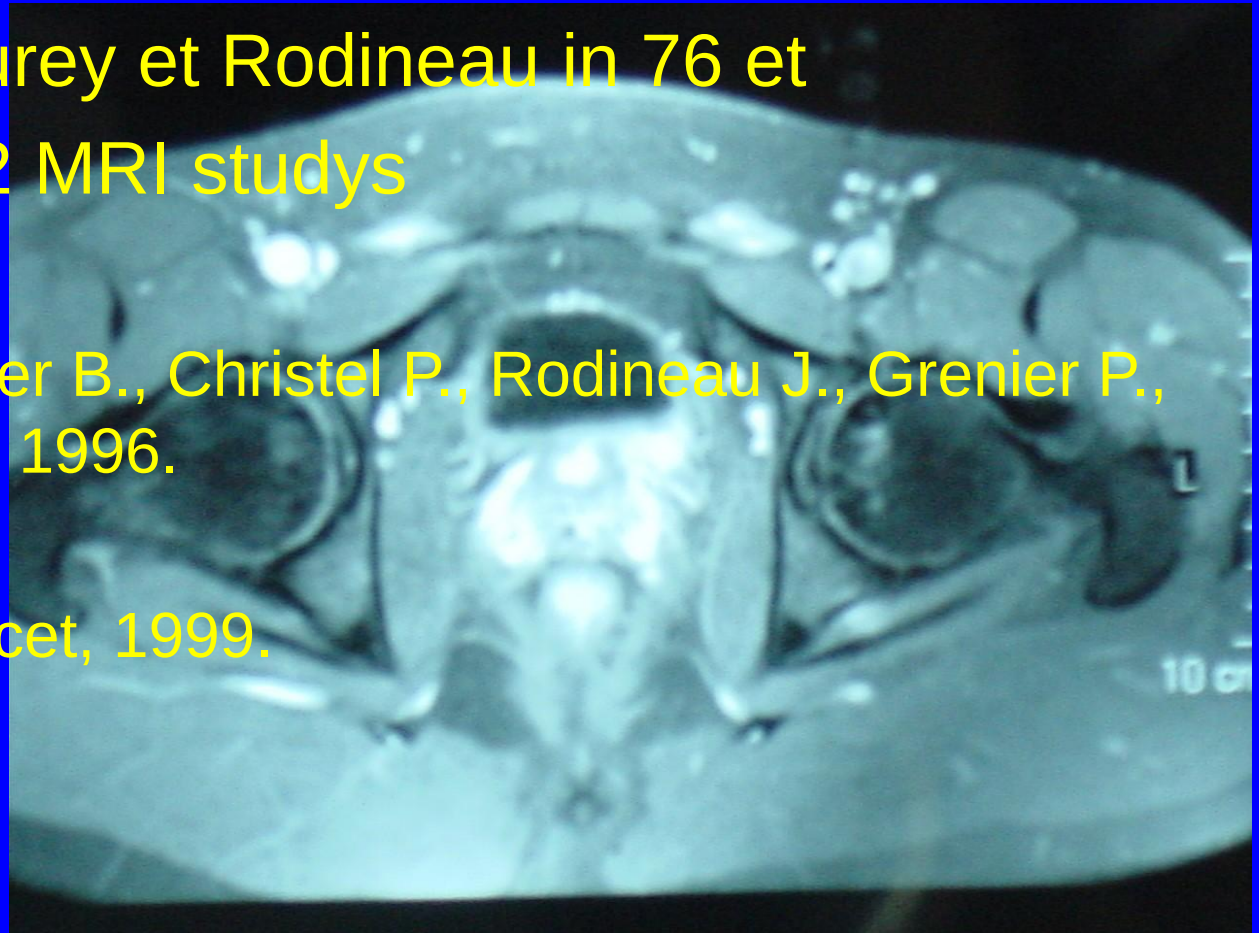


III – The abdominus rectus tendinopathy

Déjà cité par Durey et Rodineau in 76 et
Confirmée par 2 MRI studys

Ghebontni L., Roger B., Christel P., Rodineau J., Grenier P.,
J.Traumatol.Sport, 1996.

Gibbon W.W., Lancet, 1999.





IV – The Adductor Tendinopathy



She concerns the body or the insertion

Adductor Longus est le plus touché

which can be associated with nerve entrapment of the obturator nerve

Bradshaw C. et coll., Obturator nerve entrapment. A cause of groin pain in athletes. *Am.J.Sports Med.*, 1997. (n= 151)

EMG ≥ 3 months and Test infiltration



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Hölmich P. and coll., Effectiveness of active physical training as treatment for long-standing adductor-related groin pain in athletes : randomised trial, Lancet, 1999.

68 groin pain > 2 months
comparaison à 3 mois
of 2 treatment stratégies



Physiotherapy, Transverses Massages Streching, Rest	4 retours à la Compétition
Active Abdominal Musculation but also on the Hip, coordination and proprioception	23 retours à la Compétition



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Nicholas SJ., Tyler TF. Adductor muscle strains in sport, Sports Med., 2002.

Hip Isokinetic Evaluation

of professionals hockey players

F.Adductors $\leq 18\%$ in the damage group

Adductors/Abductors	95% in the indemn group
	78% in the damage group.



Srinivasan A. And Schuricht A., Long-term follow-up of laparoscopic preperitoneal hernia repair in professional athletes, J. Laparoendoscopic and advanced surgical techniques, 2002.

Treatment of 15 professionals sports players atteints de inguinal form with Pre-Peritonéal Laparoscopy

Technique de chirurgie ambulatoire extra-péritonéale permettant une vision complète du complexe inguinal et un retour précoce à la compétition (87% at 4 weeks)



FIRST CONSULTATION AT THE DECLINE OF THE EFFORT

Painful syndrome 4 sectors (symphysis, insertions of abdominal muscles, insertions of adductors, inguinal canal)

Search for main extrinsic factors (overtraining, mistakes in the physical practise, material...)

Systematic Search for differential diagnosis.

Search for associated pathology (rachis, hip)

Prescription of radiological and biological systematic complementary exams.

SECOND CONSULTATION OUT AN EFFORT



PAINS OF EVERYDAY LIFE

Total Rest

AINS, Antalgic per bones and in physiotherapy



BI- MONTHLY EVALUATION



INDOLENCE



Complete Lombo-Pelvis
Evaluation

Abdomen, Rachis, Hips
Stifness and Weakness



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Treatment Strategie

**PARTIAL REST
SPECIFIC REHABILITATION
CLASICAL + PAU-TORONTO**

MONTHLY EVALUATION



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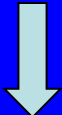
Treatment Strategie

PARTIAL REST
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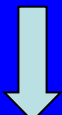
GOOD EVOLUTION



CONTROL OF WEAK POINTS



RENEWALL



YEARLY EVALUATION





Stratégie Thérapeutique

REPOS PARTIEL

REEDUCATION SUR MESURE CLASSIQUE + PAU-TORONTO

EVALUATION MENSUELLE

BONNE EVOLUTION

MAUVAISE EVOLUTION à 3 MOIS

CLINIQUE+IRM →diag. Diff.

Formes inguinales+/-Syndrome canalaire
Chirurgie
Reprise progressive à 3 mois

Forme Symphysaire Infiltration ??
Repos?? -Rééducation à poursuivre

Forme Abdos et/ou Adducteurs
+/-Syndrome canalaire
Infiltration puis Chirurgie

CONTROLE DES POINTS FAIBLES

REPRISE

EVALUATION ANNUELLE



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Conclusions



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Conclusions