

Place de la chirurgie : quand ? comment ?

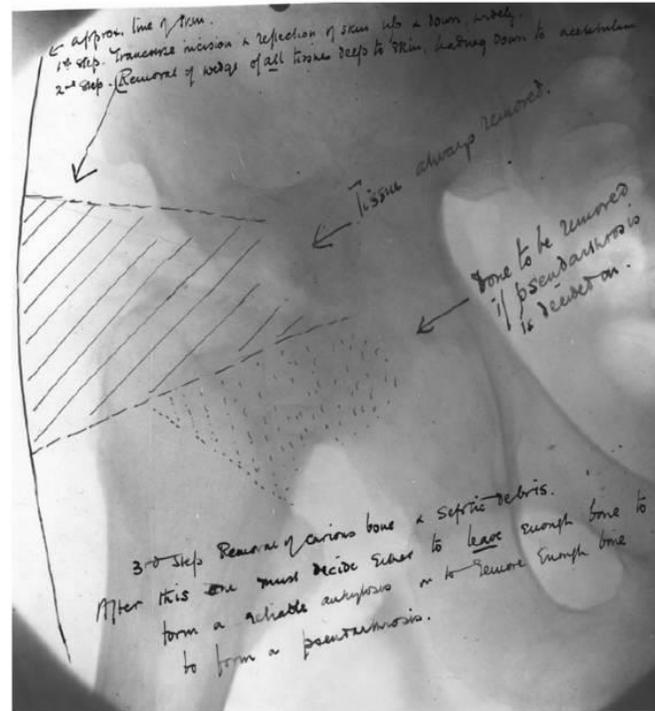
Actualités sur l'arthrite septique de l'adulte sur articulation native

Dr Thomas Gicquel, Dr Olivier Cantin,
Dr Goulven Le Henaff, Pr François-Xavier Gunepin

Quels pathologies?

- Infection sur prothèse articulaire
synovectomie à ciel ouvert avec changements d'implants
- Infection après arthroscopie
arthroscopie lavage - débridement
- Infection sur articulation native
 - Saine
 - dégénérative

Gathorne Robert Girdlestone (1881-1950)



Description initiale d'une « Girdlestone procedure » pour une arthrite tuberculeuse
Vincenten J Bone Jt Infect. 2019

ACUTE PYOGENIC ARTHRITIS OF THE HIP

AN OPERATION GIVING FREE ACCESS AND EFFECTIVE DRAINAGE

G. R. GIRDLESTONE, B M OXF, F R C S

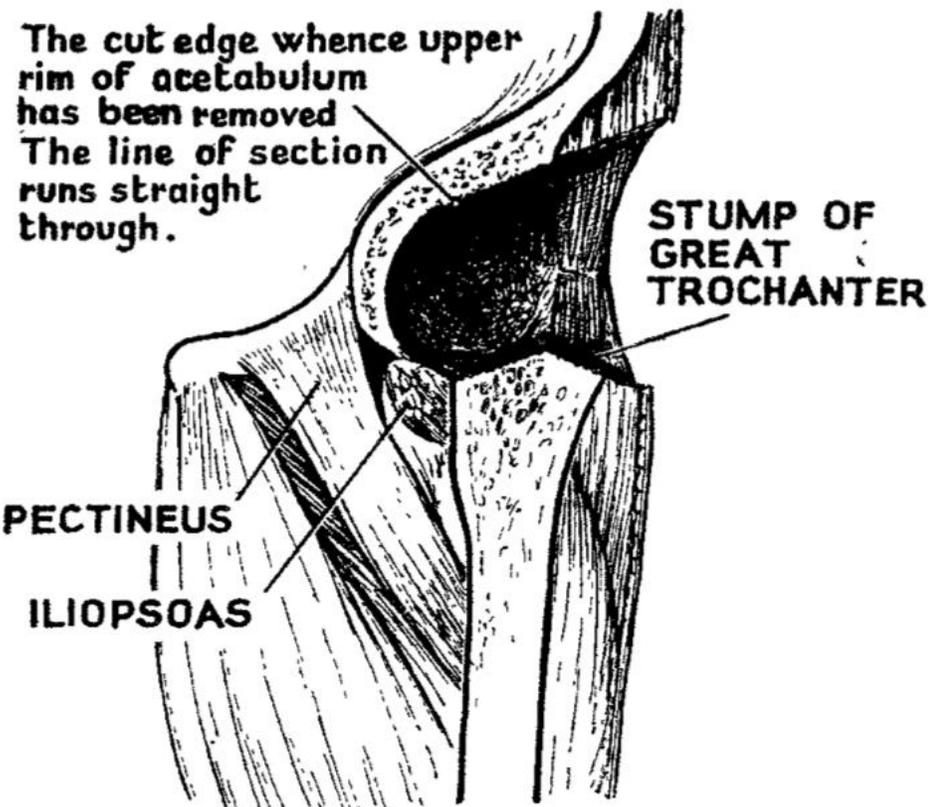


Fig. 3—The operation cavity seen in section.

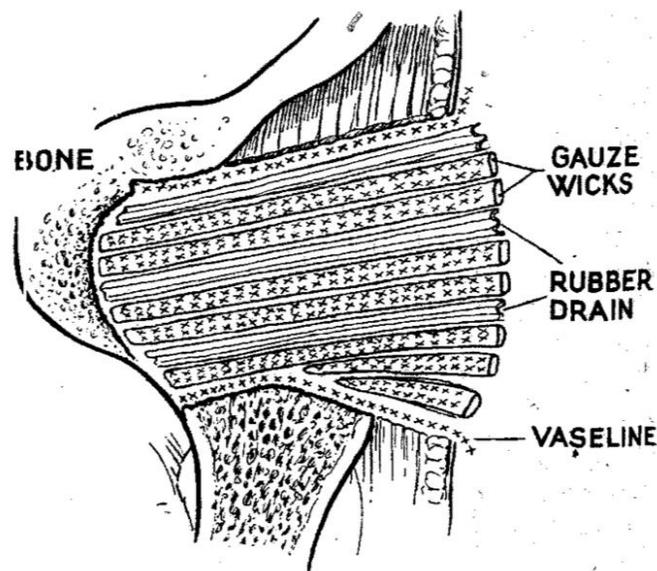


Fig. 4—Rubber drains and gauze wicks in place.

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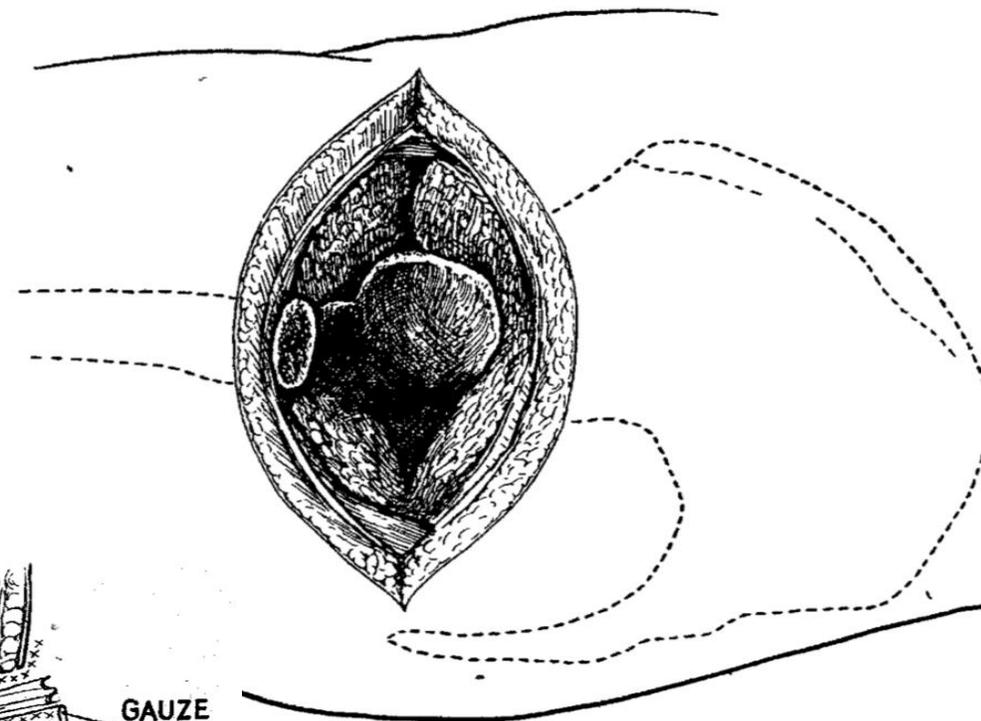


Fig. 2—The operation completed.

It is the rule in this operation to leave no cartilage, no diseased bone, no dead tissue and no dead spaces.

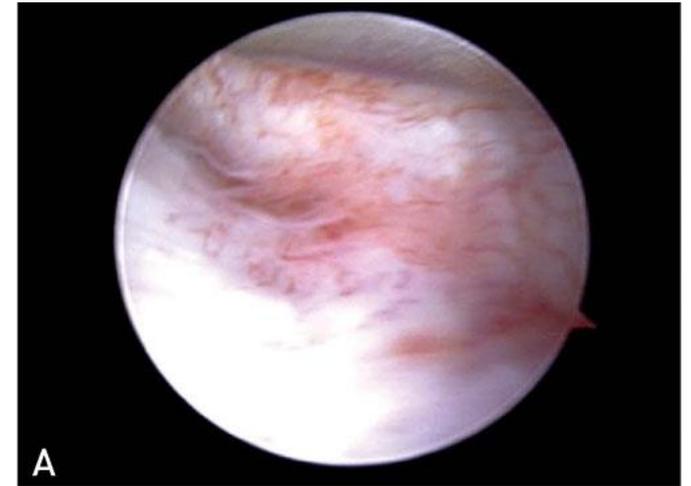
Quels moyens chirurgicaux ?

- Lavage – Aspiration à l'aiguille « daily arthrocentesis »

- Lavage – débridement

- Arthroscopique
- Ciel ouvert

- Résection osseuse / Arthroplastie secondairement



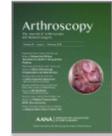
Quelle littérature ?

- Études rétrospectives
- Faible nombre
 - souvent << 100 cas
- Mélange fréquent les infections
 - sur articulations natives
 - Sur prothèse
 - Sur plaies articulaires



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Volume 34, Issue 2, February 2018, Pages 625-646.e1



Systematic Review

Arthroscopic Management of Septic Arthritis of the Native Shoulder: A Systematic Review

Muzammil Memon, M.D., Jeffrey Kay, M.D., Lydia Ginsberg, B.Sc., Darren de Sa, M.D., Nicole Simunovic, M.Sc., Kristian Samuelsson, M.D., Ph.D., George S. Athwal, M.D., F.R.C.S.C., and Olufemi R. Ayeni, M.D., M.Sc., F.R.C.S.C.

Purpose: To investigate arthroscopic management of native shoulder joint septic arthritis—specifically, indications, patient outcomes, and complications. **Methods:** PubMed, MEDLINE, and Embase were used to search the literature, and data abstraction was performed independently and in duplicate. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) checklist guided reporting and data abstraction. The quality of all included studies was assessed with the Methodological Index for Non-randomized Studies (MINORS) criteria. The results are presented in a narrative summary fashion using descriptive statistics including means, proportions, ranges, κ values, and intraclass correlation coefficient values. **Results:** Overall, 27 studies (19 case reports and 8 case series) were identified, including 115 patients (121 shoulders). The mean follow-up period was 29.1 months (range, 1-199 months). The indications for shoulder arthroscopy owing to infection included pain; limited range of motion; swelling, erythema, and tenderness; fever; elevated leukocyte count, erythrocyte sedimentation rate, and/or C-reactive protein level; synovial aspirate findings; and/or imaging findings. Overall, 46 patients (40%) achieved infection eradication and functional improvement after a single arthroscopic procedure. However, 43 patients (37%) had ongoing symptoms or complications, including 32 (30%) who required revision arthroscopic procedures, 7 (6%) who underwent open arthrotomy for septic arthritis management, 2 (2%) in whom avascular necrosis of the humeral head developed, 1 (1%) in whom adhesive capsulitis developed, and 1 (1%) in whom an irregular profile of the humeral epiphysis developed on plain radiographs. **Conclusions:** Arthroscopic management of native shoulder septic arthritis can yield alleviation of pain and a return to full range of motion, daily activities, and sports. However, there is a high reoperation rate, which may correlate with poor patient prognostic factors. This systematic review did not show the superiority of either arthroscopic surgery or open arthrotomy for the management of shoulder septic arthritis. **Level of Evidence:** Level IV, systematic review of Level IV studies.

correlation coefficient values. **Results:** Overall, 27 studies (19 case reports and 8 case series) were identified, including 115 patients (121 shoulders). The mean follow-up period was 29.1 months (range, 1-199 months). The indications for shoulder

Ciel ouvert ou arthroscopie ?

- Arthroscopie validé sur toutes les articulations
- Résultats OK
 - Kerbel J Knee Surg. 2019 (genou)
 - Lum JBJS Rev 2018 / De Sa Arthroscopy 2015 (hanche)
 - Bovonratwet Arthroscopy 2019 (epaule)
- Moins d'échecs / Moins de ré intervention
 - John JBJS Am 2017 (genou)
 - Sammer DM JBJS Am 2009 (poignet)
- Meilleur résultat fonctionnel / Mobilité articulaire
 - John JBJS Am 2017 (genou)
 - Wirtz Int Orthop 2001 (genou)



Sauf Böhler J Shoulder Elbow Surg. 2017
+ de réintervention (épaule)

Technique de débridement arthroscopique

- Synovectomie ou simple lavage ?
 - Classification de Gachter
- Effet du lavage :
 - Volume de lavage = facteur prédictif de réussite

Joo J Shoulder Elbow Surg. 2019
N =97
12 échecs (12,4%)

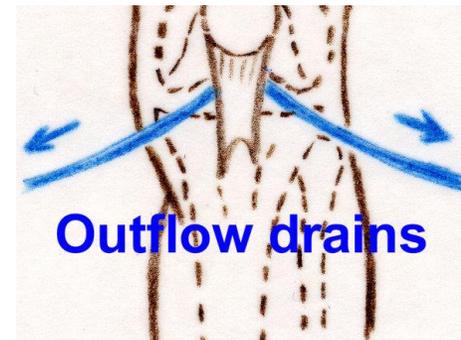
 - Lavage continu (après arthroscopy)

Kuo J Trauma 2011 (genou)
Shukla J Clin Orthop Trauma. 2014 (hanche et genou)

Table III Differences between eradicated and recurred groups after single arthroscopic surgical procedure

Variable	Eradicated group	Recurred group	P value
No. of patients	85	12	
Patient characteristics			
Age at surgery (range), yr	61 (21-97)	63 (42-83)	.680
Male sex, n	46	7	>.999
Affected shoulder on right side, n	51	8	.899
Rotator tear, n	63	10	.737
Hypertension, n	34	7	.373
Diabetes mellitus, n	18	6	.070
Initial blood test result			
WBC count (range), cells/ μ L	9700 (3700-35,800)	13,023 (5740-55,900)	.422
ESR (range), mm/h	68 (21-120)	82 (35-120)	.143
CRP level (range), mg/dL	7.0 (0.6-24.1)	10.6 (1.0-21.8)	.070
Initial joint fluid analysis			
WBC count, cells/ μ L	101,224 \pm 61,820.0	96,568 \pm 31,394.6	.683
Culture			
No growth	52	9	
Positive culture result	33	3	
Causative organism			
MS organism or negative culture result	59	11	.232
MR organism	26	1	
Volume of irrigation, L	16.8 \pm 4.61	10.4 \pm 3.68	<.001

WBC, white blood cell; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein; MS, methicillin sensitive; MR, methicillin resistant.

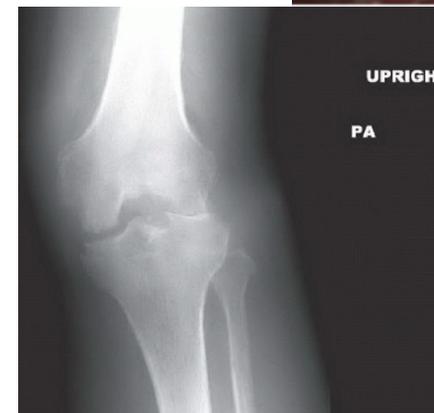
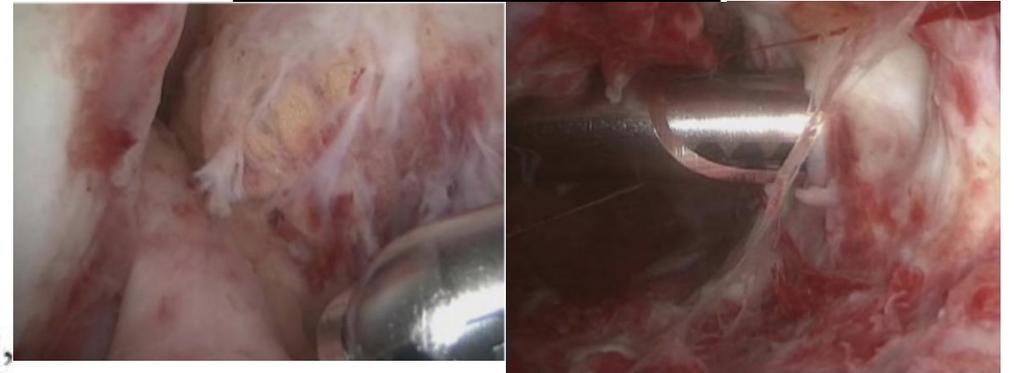
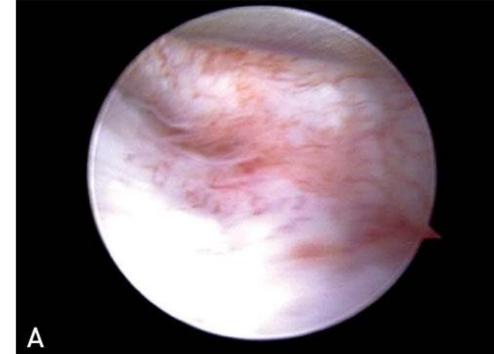


Ateschrang BMC Musculoskeletal Disorders 2011

Classification Gächter

Gächter Stage Clinical Aspect

- I Hyperaemia of synovia, effusion
- II Hypertrophia of synovia / pus
- III Beginning cartilage damage, no radiological destruction
- IV Radiological visible changes to bony structures, synovia grows over the cartilage



Classification Gächter

- Intérêt thérapeutique ?
 - Balabaud KSSTA 2007 : synovectomie selon stade Gächter (≥ 3 ou échec)
- Intérêt prédictif / risque de ré intervention
 - Aïm OTSR 2015
- Intérêt pronostic / Résultat fonctionnel
 - Yanmış Acta Orthop Traumatol Turc. 2011 (genou)

Combien de lavage ?

- Efficacité > 90%
- 1 à 3 lavages
- Fréquemment plus d'un lavage
 - 25% des cas
Aïm OTSR 2015
 - 9 à 74% des cas
Stutz KSSTA 2000 (toutes articulations)

Table 4 Arthroscopic procedures in correlation to the stage of infection

Arthroscopic procedures	Stage I joints (n=22)	Stage II joints (n=44)	Stage III joints (n=12)	Total joints (n=78)
One	21	21	3	45
Two	1	10	5	16
Three	–	10	3	13
Four	–	3	1	4

Stutz KSSTA 2000

Quel schéma thérapeutique ?

- Chirurgie non systématique
- Aspiration-lavage à l'aiguille possible (aussi efficace ?)
- Réponse graduée
- Délai de prise en charge chirurgical ?
 - Pas en urgence
 - Lauper J Infect. 2018 (toutes articulations)
 - Besnard M OTSR 2018
 - Inférieur à 15 jours
 - Jeon JBJS Am (Epaule)
- Répéter les lavages : douleur / fièvre / CRP

Harada South Med J. 2019

Travail en équipe

Revue de chirurgie orthopédique et traumatologique 104 (2018) 842–846



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Mémoire Original / Travaux de la Société d'Orthopédie de l'Ouest (SOO)

Impact de la mise en place des centres de référence pour les infections ostéoarticulaires sur le traitement arthroscopique des arthrites septiques du genou et de l'épaule : étude rétrospective^{☆,☆☆}



Impact of setting up a bone and joint infection referral center on arthroscopic treatment of septic arthritis of the knee and shoulder: Retrospective study

Marion Besnard^{a,b,*,c}, Damien Babusiaux^{a,b,c}, Pascal Garaud^a, Philippe Rosset^{a,b,c}, Louis Bernard^{a,d}, Louis-Romé Le Nail^{a,b,c}, Julien Berhouet^{a,b,c},
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- N=52
- Pas d'influence du délai
- **Importance de la prise en charge pluridisciplinaire en centre de référence**
- Pas de différence entre arthroscopie lavage et arthroscopie synovectomie

Focus sur Résection osseuse / Arthroplastie secondaire



Shaikh AA Clin Orthop Relat Res. 2014

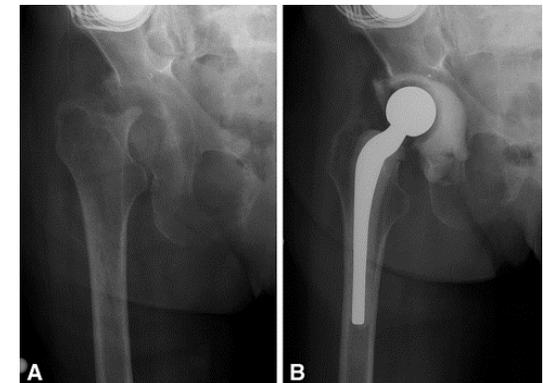


Focus sur Résection osseuse / Arthroplastie secondaire

- Destruction articulaire = Gachter 4
 - En cas de prise en charge tardive ?
 - > 3 semaines
 - Matthews J Infect. 2008 (hanche)
 - En cas d'arthrose symptomatique préalable
 - Shaikh AA Clin Orthop Relat Res. 2014 (genou)
 - Nazarian J Arthroplasty. 2003 (genou)
 - Goetti. World J Orthop. 2019 (épaule)
-



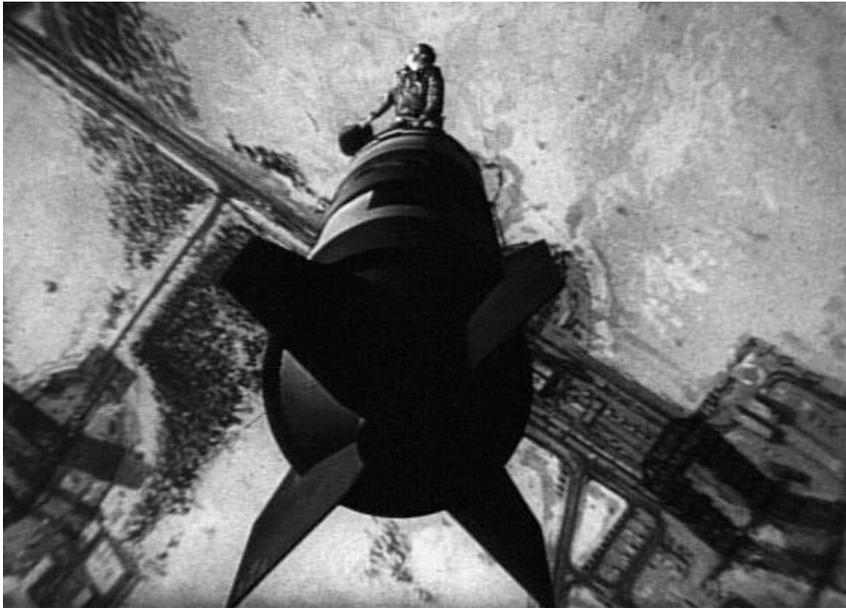
Goetti. World J Orthop. 2019



Fleck EE Clin Orthop Relat Res. 2011

Conclusion

Le mauvais exemple :



AVOIR UNE REPONSE ADAPTEE

REMETTRE EN QUESTION

NE PAS SE PRECIPITER

NE PAS DECIDER SEUL

Docteur Folamour ou : comment j'ai appris
à ne plus m'en faire et à aimer la bombe