

Les adénites cervicales: du traitement médical à l'approche chirurgicale

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CHU Sainte-Justine

Le centre hospitalier
universitaire mère-enfant

Université 
de Montréal



CHU
— UCL —
NAMUR

- Epidémiologie des masses cervicales
- Indication de biopsie des adénopathies
- Adénites aiguës, subaiguës et chroniques:
 - adénite bactérienne
 - mycobactéries non tuberculeuses
 - griffe du chat

Masses cervicales

- 3 origines: congénital, inflammatoire, néoplasique
- 80-90% = bénin

Table 1 Differential diagnosis of pediatric head and neck masses

Congenital masses	Inflammatory masses	Neoplastic masses
Thyroglossal Duct Cyst	Reactive Lymphadenopathy	<i>Benign</i>
Branchial Cleft Cyst	Bacterial/Viral Adenopathy	Lipoma
Hemangioma	Granulomatous Adenopathy	Fibroma
Cystic Hygroma	<i>Mycobacterium tuberculosis</i>	Neurofibroma
Dermoid Cyst	Atypical Mycobacterial Infection	Thyroid nodule
Bronchogenic Cyst	Toxoplasmosis	<i>Malignant</i>
Laryngocele	Histoplasmosis	Lymphoma
Teratoma	Sarcoid	Non-Hodgkin's Lymphoma
Thymic Cyst	Cat Scratch Disease	Hodgkin's Disease
Cervical Rib	Sialadenitis	Rhabdomyosarcoma
	PFAPA	Neuroblastoma
	Kawasaki	Thyroid Cancer
		Nasopharyngeal Carcinoma
		Salivary Gland Malignancies
		Metastasis

1° cancer tête-cou

Adénopathie-Adénite

- Adénopathie: augmentation taille-
modification consistance= cancer, maladies auto immunes,
infections
- **Adénite**: + douleur, signes inflammatoires,
collection , modification peau = infections
 - Aiguë
 - Subaiguë
 - Chronique

Adénopathie-adénite

- Anamnèse:

Processus aigu-subaigu-chronique

Infection VRS récente

Symptômes généraux

Contact animaux-mode de vie

Autres aires atteintes

Changement apparence

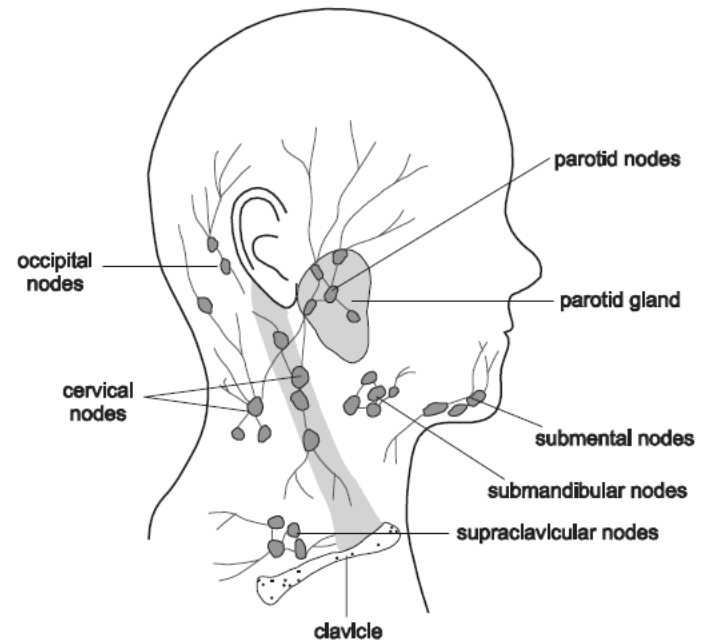
- Clinique

localisation

taille, mobilité, sensibilité, aspect peau,

autres aires, hépato splénomégalie

torticolis



Adénopathies-adénites cervicales

- Anamnèse:

Processus aigu-subaigu-chronique

Infection VRS récente

Symptômes généraux

Contact animaux-mode de vie

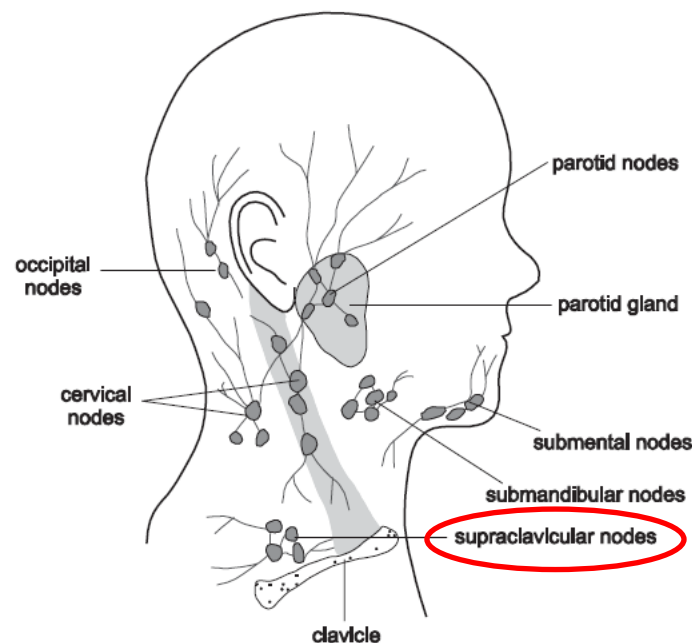
Autres aires atteintes, changement
apparence

- Clinique

localisation

taille, mobilité, sensibilité, aspect peau,
autres aires, hépato splénomégalie

torticolis



Adénopathies palpables enfants sains:

< 2 an	27% à 60%
2-5 ans	40%
8-9 ans	28%

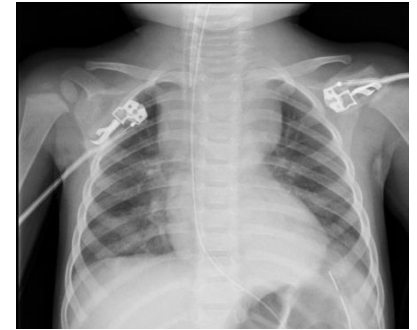
PAS supraclaviculaire

En général < 2 cm

Drapeaux rouges



- Adénopathie chez enfant avec ATCDS pathologie maligne
- Taille > 2-3 cm
- Localisation supraclaviculaire → Rx thorax
- Hépatosplénomégalie
- Augmentation rapide + signes neurologiques (LNH-7-11 ans)
- Persistantes, non douloureuses, fixes, S généraux, supraclaviculaire (LH-2° décade)
- Echographie: hétérogène, surface ronde, absence de hile
- Biologie: anémie, thrombopénie, ↑LDH



Biopsie à aiguille fine (BAF) ou chirurgicale?

- **BAF:** pas anesthésie générale
culture, PCR, cytométrie en flux, cytogénétique, histologie
pas de cicatrices ni complications
sensibilité 67-90%-très spécifique
permet éviter biopsie chirurgicale

Table 4
The results of fine needle aspiration cytology in various published paediatric studies

Study	N	Sites	Unsatisfactory	Benign	Malignant	False Pos	False Neg	Sensitivity (%)	Specificity (%)
Liu [50]	50	H&N	9	38	3	0	1	67	100
Ramadan [49]	29	H&N	1	26	3	2	1	67	92
Cohen [53]	92	All	6	53	33	2	1	97	96
Ponder [48]	106	LN	5	88	13	1	0	100	99
Eisenhut [54]	288	All	2	273	13	1	1	92	99
Taylor [51]	64	All	7	38	19	0	1	95	100
*Kardos [44]	153	LN	9	86	37	4	3	92	95
*Mobley [46]	89	H&N	1	68	20	2	1	95	97
Schaller [52]	32	All	0	19	13	0	0	100	100
Silverman [56]	135	All	5	93	36	0	4	89	100
*Wakely [45]	112	All	1	70	41	2	1	98	97
Rapkiewicz [55]	85	H&N	0	71	14	0	1	93	100

The studies marked with an asterisk almost certainly report on the same cohort of children, but the degree of overlap is difficult to establish. (H&N = all masses in the head and neck region, LN = lymphadenopathy in neck, groin and axillae, All = any mass at any site).



245/1235=19,5%

Locke et al 2014



Histology of solid lateral cervical masses biopsied in children



MP. Charron^{a,b,*}, A. Abela^{a,b}, P. Arcand^{a,b}, C. Giguère^{a,b}, A. Lapointe^{a,b},
MC. Quintal^{a,b}, O. Cavel^{a,b}, P. Froehlich^{a,b}

^aCentre Hospitalier Universitaire Sainte-Justine, Pediatric Otolaryngology Service, Canada
^bUniversité de Montréal, Canada

- Rétrospective (2002-2012)-biopsie chirurgicale masses latéro cervicales
- 44 biopsies:
 - 26 = inflammatoire (13 MNT-10 réactionnelles)
 - 9 = non inflammatoire
 - 5 = tumeur maligne
- imagerie (écho-CT): peu utile pour diagnostic de malignité (33% sensibilité)
- très grande variation dans prise en charge
- contribution résultats biopsie questionnable dans 39% cas



GUIDELINES

Adénites cervicales

Aiguës (1-2 s) : bilatérales
unilatérales

Virales-*PFAPA*
Bactériennes
Kawasaki

Subaiguës-chroniques (2-6 s) :

Mycobactéries non
tuberculeuses et TBC
Griffe chat
Toxo, fongique, HIV
Sarcoidose

Adénites cervicales

AGE

Nouveau-né

< 1 an

1-4 ans

5-15 ans

PATHOGENE

SBHGB- S aureus

S aureus

SBHGA

considérer Kawasaki

S aureus

SBHGA

MNT

Kawasaki

anaérobies

toxos

griffe du chat

TBC

Adénites cervicales aiguës bilatérales

- Virales:

- bilatérales, non inflammatoires, petites, résolution spontanée

- IVRS (angine)

- RRO, varicelle, herpes simplex, coxsackie, adénovirus

- CMV,EBV: éruption, hépatosplénomégalie

- PFAPA: récidivant-T°-aphtes-pharyngite

- Diphtérie: angine membraneuse

Adénites cervicales aiguës

- Bactériennes:

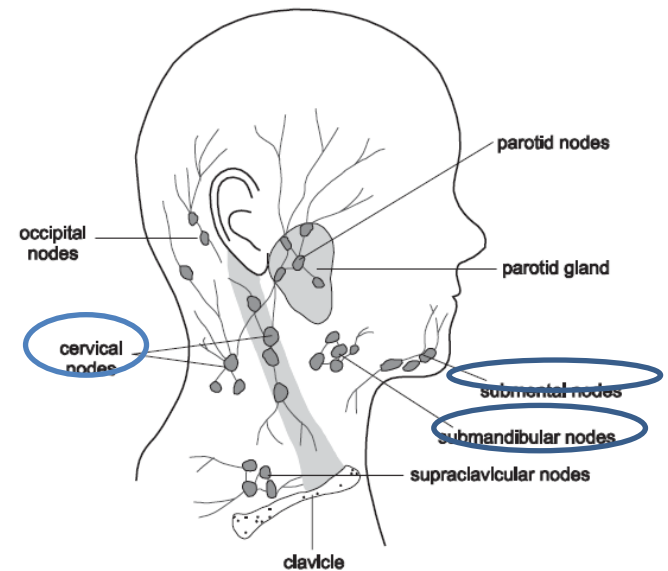
- unilatérales, inflammatoires, >2-3 cm , augmentation rapide-température-S inflammatoire

- 1 à 4 ans (80%)

- S aureus et S pyogenes

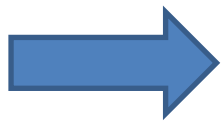
- grand enfant: caries (anaérobies)

- NN: SBHB + cellulite



ADENITE AIGUE: PATHOGENES

	Canada	US	US
	Luu 2005	Neff 2013	Worley 2015
Adénites drainées	60	277	76 (≤ 5 ans)
Cultures + (n)	51	183	66
S aureus	70,8%	54%	74% (93% ≤ 1 an)
MRSA		20%	38%
S pyogenes	8,8%	28%	12%



S aureus prédomine (surtout < 1 an) suivi S pyogenes

Apparition MRSA US (Clinda S) –incidence faible Canada-Belgique

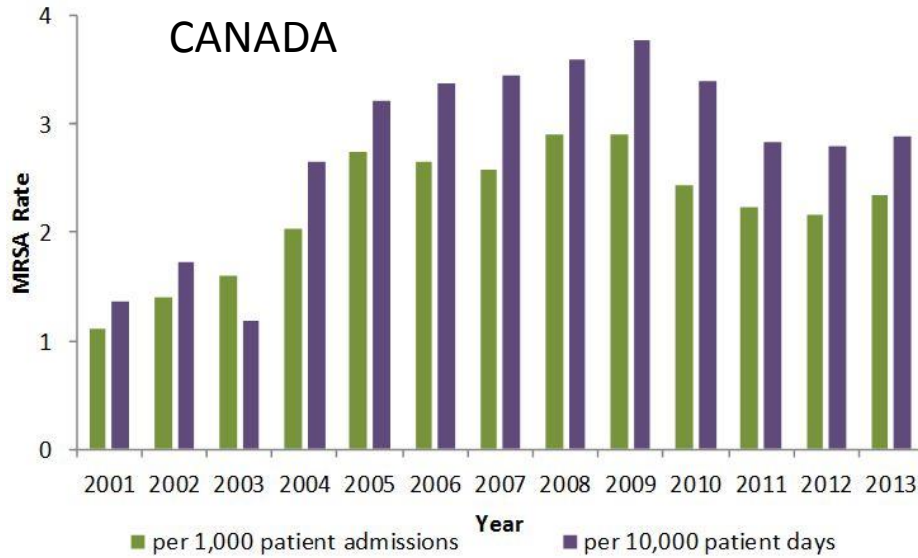
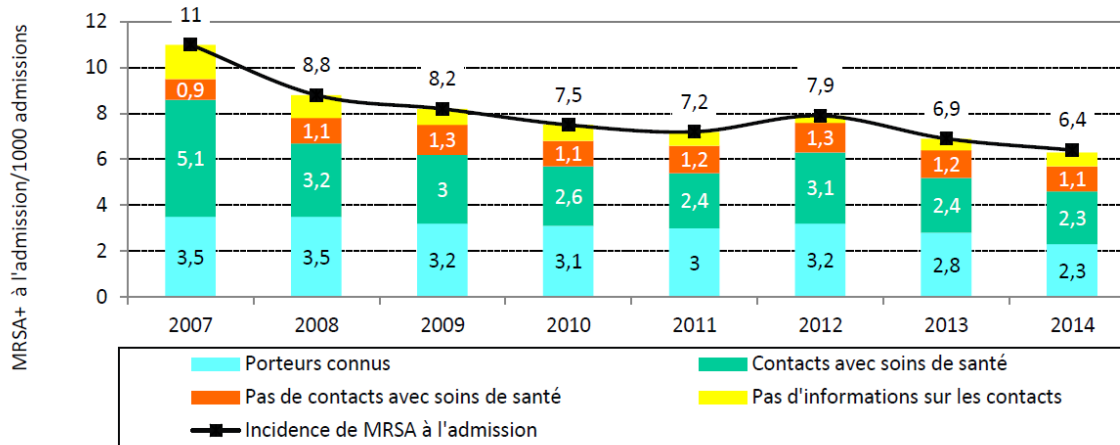


Figure 2: Évolution de l'incidence de MRSA présent à l'admission du patient: réparti par type d'antécédents et contacts du patient avec des structures de soins



BELGIQUE

Clinical Practice Guidelines by the Infectious Diseases Society of America for the Treatment of Methicillin-Resistant *Staphylococcus aureus* Infections in Adults and Children: Executive Summary

CID 2011

11. In hospitalized children with cSSTI, vancomycin is recommended (A-II). If the patient is stable without ongoing bacteremia or intravascular infection, empirical therapy with clindamycin 10–13 mg/kg/dose IV every 6–8 h (to administer 40 mg/kg/day) is an option if the clindamycin resistance rate is low (eg, <10%) with transition to oral therapy if the strain is susceptible (A-II). Linezolid 600 mg PO/IV twice daily for children \geq 12 years of age and 10 mg/kg/dose PO/IV every 8 h for children <12 years of age is an alternative (A-II).

Guidelines for the prevention and management of community-associated methicillin-resistant *Staphylococcus aureus*: A perspective for Canadian health care practitioners

Can J Infect Dis Med Microbiol Vol 17 Suppl C September/October 2006

TABLE 6
Guidelines for the management of infections due to community-associated methicillin-resistant *Staphylococcus aureus* (MRSA)

Clinical disease	Key features	Management principles	Antimicrobial choices*
Skin and soft tissue infection (SSTI)			
Mild	Localized disease	Culture selectively†	Generally not indicated
	Infected scratches Insect bites Furuncles Small abscesses Absence of systemic illness	No antibiotic therapy recommended except for young or immunocompromised host Cover draining lesions Emphasize personal hygiene Close follow-up Return if worsening	Topical antiseptic or antibacterial (eg, bacitracin) therapy may be considered. Systemic antimicrobial therapy may be considered in the young infant or immunocompromised host.
Moderate	Cellulitis	Culture (blood if febrile, site if purulent)	ET includes clindamycin 150 mg to 450 mg every 6 h po and ped dose of 30 mg/kg/day + every 6 h to 8 h po, or
	Moderate abscesses Minimal or no associated systemic features	Drainage of abscess or needle aspiration Oral therapy in older child or adult Consider parenteral therapy for young or immunocompromised host Appropriate infection control measures Imaging for extent and complications (case by case) Close follow-up Return if worsening	TMP-SMX one double-strength tablet or two regular-strength tablets every 12 h po and ped dose of 8 mg/kg/day to 12 mg/kg/day (based on TMP component) + every 12 h po/IV plus coverage for group A streptococcus, or doxycycline‡ 100 mg every 12 h po. If parenteral therapy is necessary, see choices for severe SSTI. Treat proven MRSA as above, based on sensitivity testing. If parenteral therapy is necessary, see choices for severe SSTI.
Severe	Extensive cellulitis	Culture (blood if febrile, site if purulent)	ET includes vancomycin 1 g every 12 h IV and ped dose of 40 mg/kg/day to 60 mg/kg/day + every 6 h IV. Some experts recommend adding cloxacillin or a first-generation cephalosporin while awaiting culture and sensitivity results (superior for MSSA). Clindamycin may be added in cases of toxin-mediated syndrome.
	Large or multiple abscesses Associated systemic features	Drainage of abscess Hospitalize Parenteral therapy Appropriate infection control measures Infectious disease consultation Imaging for extent and complications	Treatment for proven MRSA includes vancomycin 1 g every 12 h IV and ped dose of 40 mg/kg/day to 60 mg/kg/day + every 6 h IV. Alternatives include clindamycin 600 mg to 900 mg every 8 h IV/IM (if sensitive) and ped dose of 30 mg/kg/day to 40 mg/kg/day + every 6 h to 8 h IV or TMP-SMX* 8 mg/kg/day to 10 mg/kg/day (based on TMP component) + every 12 h IV (if sensitive) and ped dose of 8 mg/kg/day to 12 mg/kg/day (based on TMP component) + every 6 h IV. Clindamycin is bacteriostatic and should not be used alone if a bactericidal drug is required.

Adénite aiguë: prise en charge

- Antibio contre *S aureus* et SBHGA : β lactames
Si Facteur de risque MRSA: clindamycine
- Aspiration(s) aiguille
- Drainage chirurgical : facteurs prédictifs?

Acute adenitis in children: Clinical course and factors predictive of surgical drainage

Thuy Mai Luu,¹ Isabelle Chevalier,¹ Marie Gauthier,¹ Ana Maria Carceller,¹ Arie Bensoussan² and Bruce Tapiero¹

¹*Departments of Pediatrics and* ²*Surgery, Hôpital Sainte-Justine, Montreal, Québec, Canada*

- 1^o épisode adénite aiguë -unilatérale- $\geq 2,5$ cm
- 284 patients (âge moyen:4 ans)
- Drainage chirurgical n=60 (21%) en moyenne 4j après admission sur base clinique (n=29) ou imagerie écho-CT (n=31)

Facteurs prédictifs:

< 1 an (RR 14,5)

durée>48h avant admission (RR 2,9)

prise antibio dans les 48h (RR 1,9)



Original Contribution

Acute neck infections in children: who is likely to undergo surgical drainage?
☆☆☆☆☆☆☆☆★☆☆

Michael W. Sauer MD^{a,*}, Sujit Sharma MD^b, Daniel A. Hirsh MD^{a,c,d}, Harold K. Simon MD MBA^{a,c,d},
Beesan S. Agha DO^a, Jesse J. Sturm MD MPH^{a,c,d}

- 2009-10: 768 patients évalués pour infection cou
- 112 drainage chirurgical:

F Prédictifs: fluctuation (RR 18,9)

<4 ans (RR 2,79)

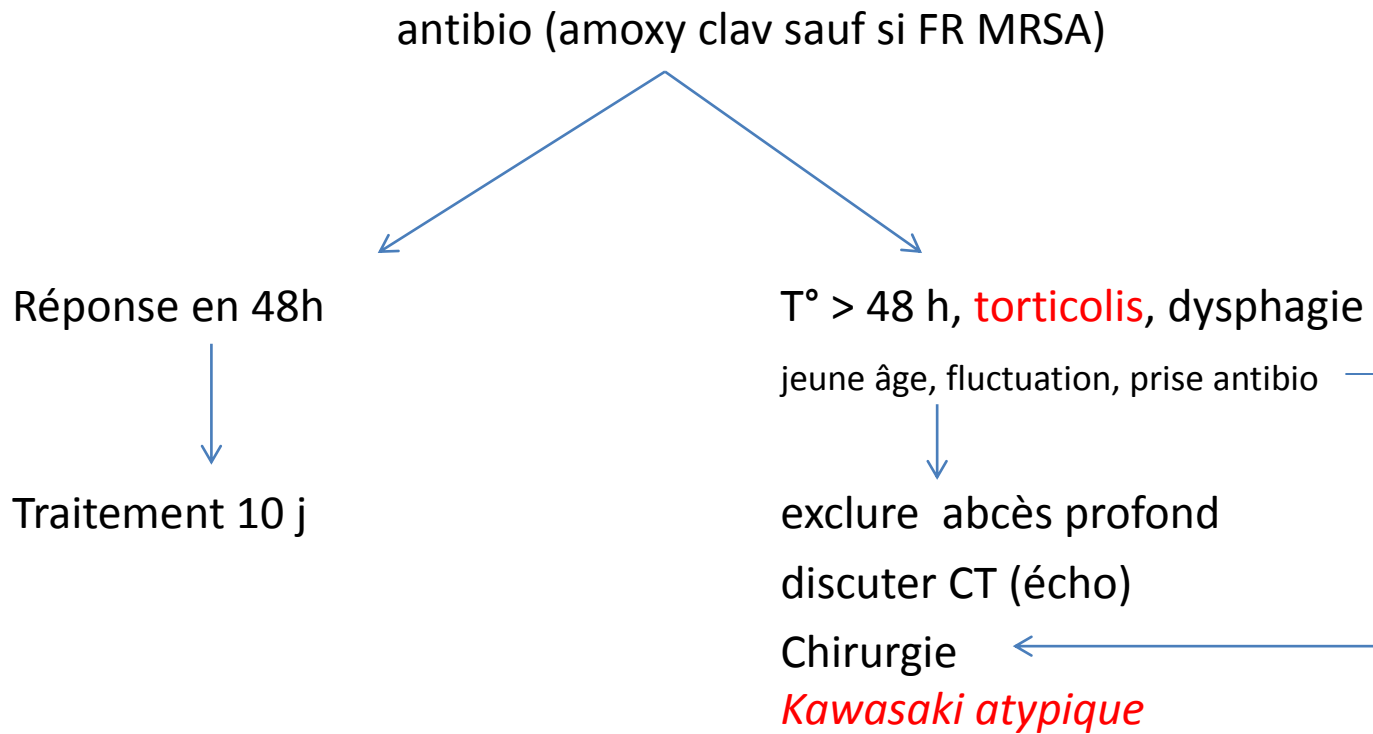
prise antibio au préalable (RR 1,7)

visite urgence (RR 2,79)

Si pas fluctuation ni prise antibio: VPN 96,2%

- Pas de gain CT par rapport écho pour diagnostic d'abcès

Adénite unilatérale aiguë



FR chirurgie: jeune âge, délais traitement, fluctuation, antibio préalable

Adénites cervicales

Subaiguës-chroniques (2-6 s) : Mycobactéries non tuberculeuses et TBC
Griffe chat
Toxo, fongique, HIV
Sarcoidose

Mycobactéries non tuberculeuses

- 2-4 ans
- **unilatéral (>95%)-submandibulaire** ou cervical ou préauriculaire
- Pas de réponse antibio standard
- Très rarement autres atteintes (médiastinale: TBC, disséminée susceptibilité génétique)
- Pas de signes généraux, GB nl pas de SI
- 50% fluctuation, 10% fistulisation
- Aspect violacé

Diagnostic MNT

- *Confirmé:* culture ou PCR sur matériel
(exérèse chirurgicale > PAF)
- *Probable:* mise en évidence bacilles acido
résistants,
réaction granulomateuse,
caséum,
sérologie et PCR BH négative,
culture négative TBC

MNT

- Epidémiologie:
 - M *avium-intracellulare*
 - M *scrofulaceum*
 - M *malmoense, haemophilum, interjectum, xenopi*

M. Tuberculosis

Adénopathies cervicales post bilat

Ville

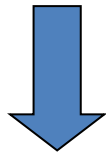
Tout âge

RX thorax (+)

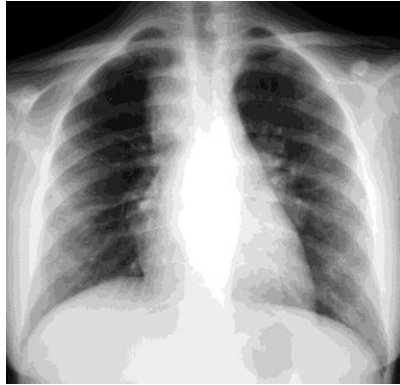
ID (+)

Contage (+)

IGRA



Ponction diagnostique à l'aiguille
Traitement médicamenteux



MNT

Adénopathie cervicale ant unilat

Milieu rural

Jeune

RX thorax (-)

ID (- ou 5-10 mm)

Contage (-)

IGRA (-)



Exérèse chirurgicale diagnostique et
curative (antibiotiques)

Place ID

14 mois

Adénopathie persistante

Pas de réponse antibio standard

Chats:sérologie BH négative

ID différentielle:



M avium:	12 mm
M Scrofulaceum:	8 mm
M Tuberculosis:	0 mm

Exérèse complète: M avium

MNT-ATS 2007

A difficult clinical problem arises when a child who has **granulomatous disease**, with or without AFB on examination of the excised lymph nodes, also has a **PPD tuberculin skin test that is strongly positive (e.g., 15 mm)**. A **course of anti-TB therapy** while awaiting the results of the lymph node culture **is recommended, especially when there are any risk factors for TB** (e.g., positive family history and foreign-born child).

If the cultures fail to yield any mycobacteria, anti-TB therapy should be discontinued unless there are significant risk factors for TB.

MNT: traitement

- ✓ **Observation:** Δ précis (PAF)- risque fistule-longue durée (6-12 mois)-cas Δ tardif avec risque chirurgie
- ✓ **Incision-drainage:** risque fistule-cas avec risque chirurgie
- ✓ **Excision chirurgicale:**
 - complète :** gold standard- dans les 30 jours
 - incomplète:** \pm antibio
- ✓ **Antibiothérapie ciblée :** seule ou combinée chirurgie

Surgical Excision versus Antibiotic Treatment for Nontuberculous Mycobacterial Cervicofacial Lymphadenitis in Children: A Multicenter, Randomized, Controlled Trial

Jerome A. Lindeboom,^{1,4} Ed J. Kuijper,⁵ Elisabeth S. Bruijnesteijn van Coppenraet,⁵ Robert Lindeboom,³ and Jan M. Prins²

Departments of ¹Oral and Maxillofacial Surgery and ²Internal Medicine, Division of Infectious Diseases, Tropical Medicine and AIDS, Center for Infection and Immunity, ³Department of Clinical Epidemiology and Biostatistics, Academic Medical Center, and ⁴Academic Center for Dentistry, University of Amsterdam, Amsterdam, and ⁵Department of Medical Microbiology, Leiden University Medical Center, Leiden, The Netherlands


CID 2007

- Étude randomisée-100 patients-
 - Excision complète: 96% guérison
- VS
- Antibo (clarithro+rifabutine min 12 semaines): 66% guérison

- **Excision complète:** durée H $1,9 \pm 0,6$ j
2/50 récurrence traitée par antibio
14/50 (28%) complications
durant 2 semaines post chirurgie: 20% effets 2°

VS

- **Antibio :**
à 3 mois : 22/50 (44%) guérison
durant 2 premières semaines: 74% effets 2°
2 arrêt traitement effets 2°
10/50: échec → chirurgie
16 patients fistule: antibio prolongée (6 mois)



Chirurgie: guérison complète + fréquente et rapide
Antibio: si risque chirurgie (facial) ou si récurrence post chirurgie

Conservative Wait-and-See Therapy Versus Antibiotic Treatment for Nontuberculous Mycobacterial Cervicofacial Lymphadenitis in Children

CID 2011

Jerome A. Lindeboom

¹Department of Oral and Maxillofacial Surgery, Academic Medical Center, Amsterdam University of Amsterdam, Amsterdam, the Netherlands

- Wait and See vs antibio (clari et rifabutine) 12 semaines-50 patients-**adénite MNT prouvée par PAF- abcédée +aspect violacé peau**
- Résolution complète: 36 semaines antibio vs 40 semaines observation



observation(avec diagnostic par PAF) = alternative dans les cas avancés où risque de la chirurgie

Current trends in nontuberculous mycobacteria infections in Canadian children: A Pediatric Investigators Collaborative Network on Infections in Canada (PICNIC) study

Paed Child Health 2010

Anne Pham-Huy MD¹, Joan L Robinson MD², Bruce Tapiéro MD³, Chantal Bernard MD⁴,
Sam Daniel MD MSc⁵, Simon Dobson MD⁶, Pierre Déry MD⁷, Nicole Le Saux MD⁸, Joanne Embree MD⁹,
Louis Valiquette¹⁰, Caroline Quach MD MSc^{1,11}

- Cas infection probable ou prouvé MNT-prospective-10 centres tertiaires (2005-06)-60 cas
- 34 adénites MNT: estimation incidence 1,6/10⁵ enfants
 - 79% traités par antibio inadaptés avant Δ
 - 68% ID + (61% > 10 mm)**
 - MNT détectées dans 76% (64% M avium)
 - 100% chirurgie et 74% antibio** dirigée (avant ou après)
 - durée de 10j à 3 mois
 - 0 PAF
 - 29% récidives

TABLE 2
Characteristics of nontuberculous mycobacteria (NTM)
lymphadenitis

Characterisitics	Result, n (%)
Total number of cases	34 (100)
Site of NTM lesion	
Cervical	13 (38)
Submandibular	19 (56)
Axillary	2 (6)
Inguinal	1 (3)
Parotid	1 (3)
>2 sites	2 (6)
Definite NTM	20/34 (59)
Probable NTM	14/34 (41)
Fever related to NTM	4/34 (12)
Cough	1/31 (3)
Anorexia	2/29 (7)
Weight loss	1/29 (3)
Skin discolouration	20/34 (59)
URTI before presentation	10/25 (40)
Unsuccessful antibiotic trial	27/34 (79)
Purified protein derivative test	
0–5 mm	3/18 (17)
6–9 mm	4/18 (22)
>10 mm	11/18 (61)

URTI Upper respiratory tract infection

61% ID \geq 10 mm
= Cut-off TB

PPD: 0,1 ml 5U

TABLE 5
Management of nontuberculous mycobacteria infection
and complications of therapy

Management	Lymphadenitis, n (%)	SSTI, n (%)	Pulmonary infection, n (%)
Therapy			
No therapy	0	0	4 (57)
Surgery alone	9 (26)	1 (25)	0
Medical therapy alone	0	0	3 (43)
Combination therapy	25 (74)	3 (75)	0
Surgical therapy			
Excisional biopsy	33 (97)	2 (50)	N/A
Incisional biopsy	1 (3)	1 (25)	
Functional neck dissection	3 (9)	0	
Fine needle aspiration	0	0	
Timing of medical therapy			
Preoperation	11 (32)	0	N/A
Postoperation	5 (15)	3 (75)	
Pre- and postoperation	8 (23)	0	
Unknown	1 (3)	0	
Complications			
Surgical	7 (21)	0	0
Wound infection	3 (9)	0	0
Nerve paresis	3 (9)	0	0
Fistula formation	2 (6)	0	0
Medical	2 (6)	0	0
Recurrence	10 (29)	1 (25)	1 (14)
Management of recurrence			
Surgical	1 (10)	0	0
Medical	4 (40)	0	0
Combination	3 (30)	1 (100)	0
Observation	2 (20)	0	1 (100)

N/A Not applicable; SSTI Skin and soft tissue infection

Majorité des patients =
 chirurgie + antibiothérapie
 Protocole antibio variable
 (clarithro± rifampicine)



Manque de guideline
Manque études randomisées
chirurgie seule vs chirurgie + antibio

MNT-ATS 2007

NTM cervical lymphadenitis is due to MAC in the majority of cases and **treated primarily by surgical excision**, with a greater than 90% cure rate.

A macrolide-based regimen should be considered for patients with **extensive MAC lymphadenitis or poor response to surgical therapy**

MNT-ATS 2007

For children **with recurrent disease, a second surgical procedure is usually performed.**

An alternative for recurrent disease or for children in whom surgical risk is high (e.g., risk of facial nerve involvement with preauricular nodes) **may be the use of a clarithromycin multidrug regimen such as that used for pulmonary disease .**

MNT: conclusion

- **Anamnèse:** chronique, non réponse antibio non ciblée, jeune enfant, rural, pas contagé TBC
- **ID** :si > 10 mm : Rx thorax-discuter traitement anti TBC en attendant cultures selon FR de TBC
- **Diagnostic:** cultures (PCR), histologie
- **Traitement**
exérèse chirurgicale (dans les 30 j)
antibio ciblée (macrolide + rifabutin ou rifampicine)
si exérèse incomplète, récurrence, risques chirurgie

Griffe du chat



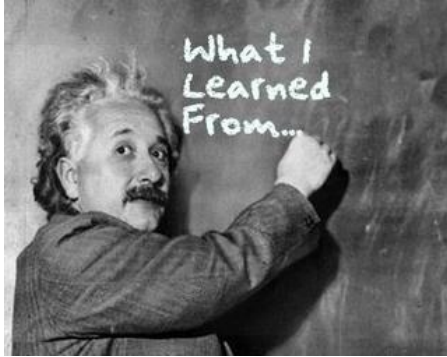
- Inoculation *Bartonella henselae* –papule-
adénopathie après 1 à 8 semaines
- Axillaire > cervicale-unilatérale
- Abcédation fréquente (10%)
- Durée:1 à 3 mois
- Tout âge
- Histologie: adénite
 granulomateuse



B H



- Sérologie: Ig G prévalence élevée
(29% personnes exposées)
Ig M peu sensible au début
(>6 semaines)
- PCR: sur PAF ou exérèse chirurgicale
- Traitement: **observation**
exérèse chirurgicale
antibio rifampicine, cipro, TMP-SMX, genta



- **Drapeaux rouges :** biopsie chirurgicale ou PAF
- **Adénites aiguës** (uni): antibio précoce (β lactames)
torticolis, non réponse: exclure
abcès profond et drainage
chirurgical
- **Adénites subaiguës:** facteurs risques TBC
MNT chirurgie < 30 jours
limite sérologie griffe de chat