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Chronic Feline Otitis

It's Much More Than Polyps

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Lecture Overview

- #1 Practical Anatomy
- #2 Studies on Middle Ear Disease in Cat
- #3 Key Triggers Leading to Middle Ear Disease
- #4 Clinical Signs
- #5 Diagnostics
- #6 Treatment Options

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IF we were talking about dogs..

- Obstruction
- Undiagnosed infection/resistant infection
- Undiagnosed underlying skin disease
- Otitis media



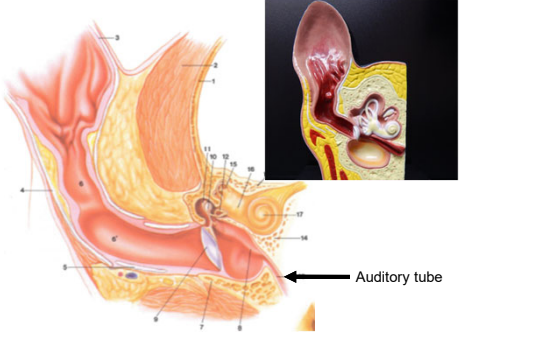
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1 Practical Anatomy

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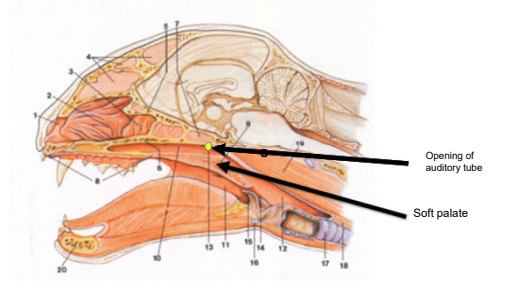
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Auditory tube

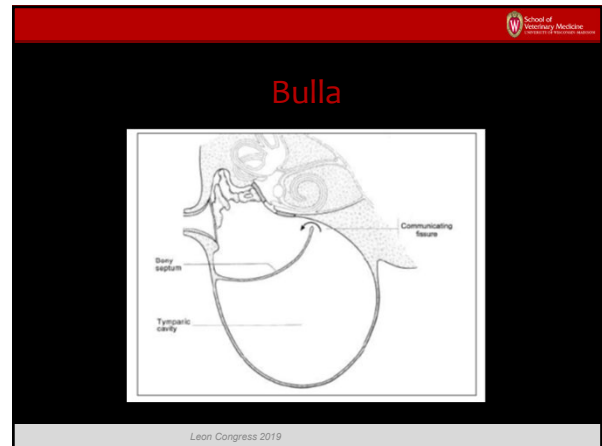
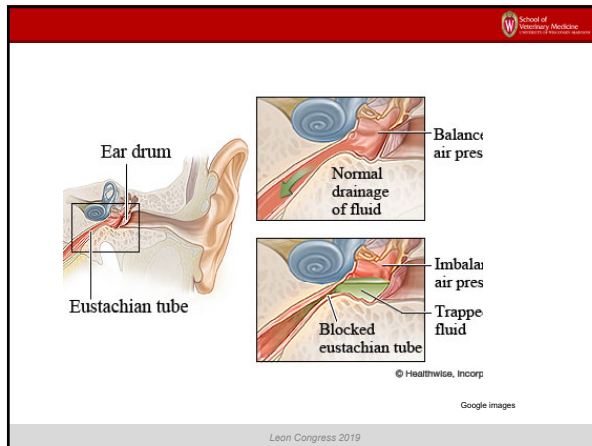
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Opening of auditory tube
Soft palate

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2
Data mining the clues
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2009
Prevalence of clinical abnormalities in cats found to have nonneoplastic middle ear disease at necropsy: 59 cases (1991-2007)
Michael D. Schlicksup, DVM; Thomas J. Van Winkle, VMD, DACV; David E. Holt, BVSc, DACV
JAVMA, Vol 235, No. 7, October 1, 2009
3442 cats underwent necropsy
59 (1.7%) had non-neoplastic middle ear disease
• Fluid, purulent, or caseous material was present in all affected bullae
• ONLY 3/59 had reported clinical signs of middle ear disease
• 6 cats had reported vestibular disease
• Post mortem finding 11 of 59 had signs of respiratory disease
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2012
PREVALENCE OF CLINICAL AND SUBCLINICAL MIDDLE EAR DISEASE IN CATS UNDERGOING COMPUTED TOMOGRAPHIC SCANS OF THE HEAD
MIRIAM SHANAMAN, GABRIELA SEILER, DAVID E. HOLT
310 cats had CT images of the head
101 cats had evidence of middle ear disease on CT
• 41 cats did not have presenting complaint-found during neurological workup
• 34 did not have primary ear complaint of ear related disease
• 27/34 had concurrent nasal disease
• Lesions were chronic in nature
• 26 had primary complaint of middle ear disease
© 2012 *Veterinary Radiology & Ultrasound*, Vol. 53, No. 1, 2012, pp 76-79.
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2014

Domestic Animals-Original Article

Histologic Characterization of the Cat Middle Ear: In Sickness and in Health

Veterinary Pathology
2014, Vol. 51(3) 351-367
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/0898010113511125
vpm.sagepub.com

M. M. Sula¹, B. L. Njaa¹, and M. E. Payton²



50 cats=100 ears
48/50 had evidence of on going disease

Conclusion: histological evidence of middle ear disease in cats is far greater than gross lesions

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3 Triggers of Otitis Media

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Upper Respiratory Infections



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How?



Upper respiratory infection and sneezing....

Inflammatory reaction, lymphoid infiltration, swelling of mucous membranes....

Sneeze-increases pressure in nasopharynx and opens ET
REFLUX of organisms into ET and tympanic bullae

Change in cell lining from stratified epithelium to respiratory epithelium with goblet cells

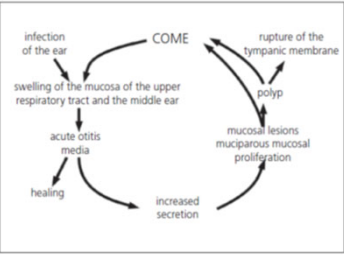
Chronic recurring process leads to metaplasia, granulation tissue and polyp (can occur in days to weeks)

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Chronic Otitis Media with Effusion (COME)

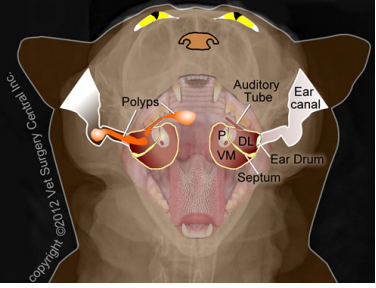
Fig. 8 Self-perpetuating circle of chronic secretory otitis media.



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Polyps, the result not the cause



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Back to the polyp.....

Case Report



Atypical, abscessated nasopharyngeal polyp associated with expansion and lysis of the tympanic bulla

Journal of Feline Medicine and Surgery 2014, vol. 18(2), 89-92
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DOI: 10.1177/1098173113514421

Joanna L Pilton¹, Charles J Ley², Katja Voss¹, Mark B Krockenberger¹, Vanessa R Barrs¹ and Julia A Beatty¹

Lethargy, weight loss, pyrexia and upper respiratory infections

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Veterinary Dermatology

DOI: 10.1111/vid.12283

Aspergillus otitis in small animals – a retrospective study of 17 cases

Elizabeth C. Goodale¹, Catherine A. Outerbridge¹ and Stephen D. White¹

RETROSPECTIVE STUDIES

Corynebacterium spp. in Dogs and Cats with Otitis Externa and/or Media: A Retrospective Study

Kerstin Hennelid, D. med. vet.¹, Rochey A.W. Rozycki, DVM, DACVIM, Francisco J. Ota-Popelko, MSc, PhD, DVM, Dorene R. Hiett, BA, PhD, Sorja Zabot, MS, DVM, DACVOT²

Journal of Feline Medicine and Surgery 2009 2, 29-34

U Am Anim Hosp Assoc 2012; 48:320-326. DOI 10.5326/JAAHA-MS-57919



Peripheral vestibular disease associated with cryptococcosis in three cats


J A Beatty^{1*}, V R Barrs¹, G R Swinney¹, P A Martin², R Malik¹

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CLINICAL REVIEW

Journal of Feline Medicine and Surgery 2015 17, 420-425

STREPTOCOCCAL INFECTIONS IN CATS ABCD guidelines on prevention and management



Tefezuz Fryman, Diane D Adlin, Corine Bourcoul-Baraton, Norman Eglerink, Tim Gruffydd-Jones, Katrin Hartmann, Marjan C. Heuvelink, Margaret J. House, Albert Lohr, Hans Lutz, Fulvio Marullo, Maria Grazia Pennati, Alan D Redford, Estienne Thery, Uwe Truyen and Karin Mudd

Original Article

Highly pathogenic beta-hemolytic streptococcal infections in cats from an institutionalized hoarding facility and a multi-species comparison

Journal of Feline Medicine and Surgery 2014, vol. 18(4), 304-310
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DOI: 10.1177/1098173113508229

Becky L Morrow^{1,2}, Rachel McMatt¹, Lindsay Joyce², Shelley McBride², Daniel Morgan¹, Chelsey Tressler¹ and Cara Mellitt¹

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Soft Palate Abnormalities

Papers

Otitis media in five cats associated with soft palate abnormalities

N. T. Woodbridge, E. A. Baines, S. J. Baines


Veterinary Record 2013

Varying ages
Short duration of clinical signs
Abnormalities found on oral examination
Otitis media
Treated with myringotomy, VBO, or medical management

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4

Clinical Signs*



*When to be suspicious.....

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Presumed Otitis Media (OM)

Unilateral or bilateral
May or may not have concurrent otitis externa (OE)
Purulent OE
Headshaking, pawing at ear, pain, pain when mouth opened, changes in eating habits, depression, hearing loss (how do you know in cat?)
Reports of clumsy behavior
Neurological signs

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Acute Head Tilt/Vestibular Signs



Intracranial infection secondary to otitis media

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2006

J Vet Intern Med 2006;20:648-656

Clinical Signs, Magnetic Resonance Imaging Features, and Outcome After Surgical and Medical Treatment of Orogenic Intracranial Infection in 11 Cats and 4 Dogs

Beverly K. Sturges, Peter J. Dickinson, Gregg D. Korts, Wayne L. Berry, Karen M. Vernau, Erik R. Wisner, and Richard A. LeCouteur

Cats 1 to 11 years of age
9 of 11 cats treated

Acute onset of neurological dysfunction-severe brainstem disease

Unilateral or bilateral otitis media
Evidence of extension of disease into the cranial vault
VBO in all cats
Cats did very well-surgery and antibiotic therapy
Good to excellent prognosis


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2018

Check for updates

Original Article



Comparison of medical and/or surgical management of 23 cats with intracranial empyema or abscessation

Sophie Martin¹, Randi Drees¹, Balazs Szladovits² and Elsa Beltran¹

22/23 via CT or MRI, one via US
10 had surgical and medical management (median 730, 1-3802 days)
10 medical only (median 183, 1-1216 days)
3 euthanized

Surgery: craniectomy to access forebrain-history of bite wound


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2019

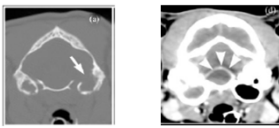
Check for updates

Original Article



Clinical features and short-term outcome of presumptive intracranial complications associated with otitis media/interna: a multi-center retrospective study of 19 cats (2009–2017)

Sarah A Moore¹, R Timothy Bentley², Shelia Carrera-Justiz², Kari D Foss¹, Ronaldo C da Costa¹ and Laurie B Cook¹



12 of 19 good outcome
No brain surgery
VBO 12/19
Medical 6/19
1 euthanized at diagnosis

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5 Diagnostics


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Tympanic Membrane



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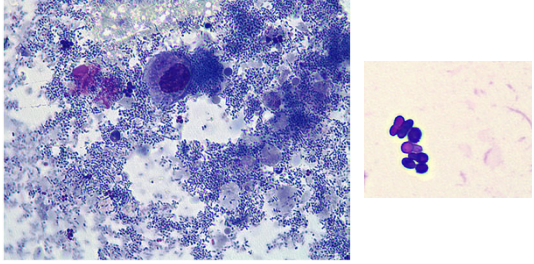
Ear Swab Cytology

Core diagnostic test
Malassezia is common-significance depends upon presence or absence of disease
 Indication for culture and susceptibility


- Septic inflammation-highly supportive of OM
- Rods

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Ear Culture*

Indicated if there is septic inflammation
 Don't waste money on c/s from vertical canal if a c/s from tympanic bulla is planned
 Spurious results will occur if ear has been cleaned or medicated-don't forget to ask...
 Use reference laboratory that will do c/s on multiple strains/isolates

*Disclosure: is controversial among specialists

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Diagnostic Imaging



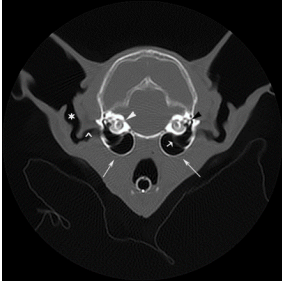
Dorsal recumbancy with head extended 10 degrees from perpendicular to table to produce a 10 degree ventral caudo-dorsal oblique radiograph

Images courtesy of Lisa Forrest
 Consultations in Feline Internal Medicine Volume 6

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CT Normal Cat

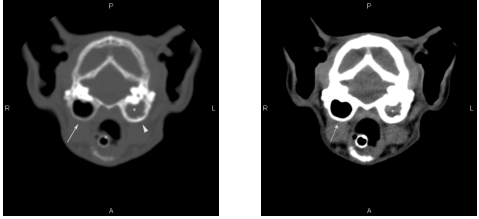


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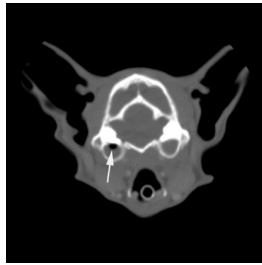
CT Imaging Otitis Media



Images courtesy of Lisa Forrest
 Consultations in Feline Internal Medicine Volume 6

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CT Findings
Otitis Media-Fluid



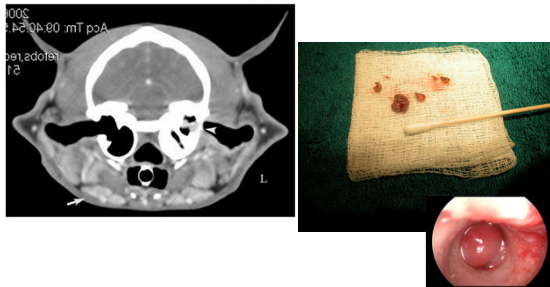
Cat with chronic rhinitis and bilateral otitis media
Gas in bulla is consistent with fluid rather than soft tissue mass

Images courtesy of Lisa Forest
Consultations in Feline Internal Medicine Volume 6
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Treatment Options

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CT shows a mass- Now what?



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Original Article

Middle ear polyps: results of traction avulsion after a lateral approach to the ear canal in 62 cats (2004–2014)

Sara DS Janssens¹, Annika N Haagsman¹ and Gert Ter Haar²

Clinical signs	n (%)
Head tilt	30 (52)
Auxiliary	18 (29)
Acoustic	3 (5)
Otorrhoea	58 (98)
Ear scratching	40 (65)
Head shaking	42 (68)
Deafness	10 (16)
Horner's syndrome	1 (2)

Recurrence was 14%
Surgical time 33 minutes

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RETROSPECTIVE STUDIES

Postoperative Complications Following TECA-LBO in the Dog and Cat

Rebecca E. Spivack, VMD¹, A. Demell Elkins, MS, DVM, DACVSI¹, George E. Moore, PhD, DVM, DACVPM, DACVIM, Gary C. Lantz, DVM, DACVH, DACVD¹ J Am Anim Hosp Assoc 2013; 49:180–186. DOI 10.5326/JAAHA-M5-13-039

11 cats (12 ears)
TECA-LBOs 4/12 ears had no postoperative facial nerve deficits
3 had facial nerve paresis
5 had facial nerve paralysis
Cats had a higher incidence of post operative facial nerve deficits
Median duration was 4 weeks

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3 – ORIGINAL ARTICLE
Models, Biological

Morphological aspects of tympanic bulla after ventral osteotomy in cats¹

Aspectos morfológicos da bula timpânica de gatos após osteotomia ventral

Adelina Maria da Silva¹, Wilson Machado de Souza², Roberto Gamero de Carvalho³, Gláucia Fabrício Machado⁴, Sílvia Helena Vianna de Paula⁵
Acta Cirúrgica Brasileira - Vol. 24 (3) 2009 - 177



Post operative regeneration took 16 weeks

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Medical Management

Original Article



Retrospective study of the presentation, diagnosis and management of 16 cats with otitis media not due to nasopharyngeal polyp

Nicola Swales¹, Aiden Foster² and Natalie Barnard¹

Journal of Feline Medicine and Surgery
3:6
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/1098173117704262
journals.sagepub.com/home/fms
This paper was reviewed and processed
by the European External Office (EEO)
for publication in JFMS
SAGE

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Medical Management

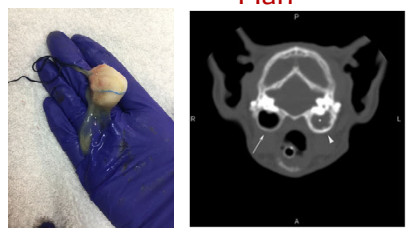
- **Conservative treatment**
- Plan to treat with oral antibiotics for 4-6 weeks
- Topical therapy
- **Middle ear irrigation**
 - Obtain culture prior to flush
 - C/S isolates from TB will differ from those in external ear canal
- **Flush sinus**
 - Yes to steroids if there is concurrent sinusitis

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Medical Management

CULTURE EVERYTHING-Then Make A Plan

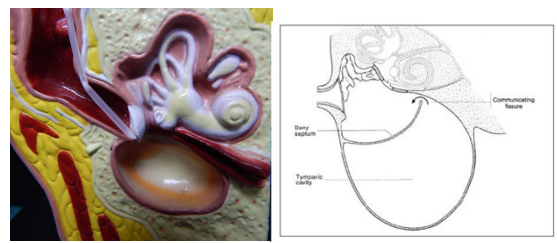


IDEXX PCR Tests

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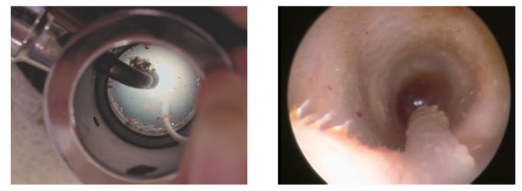
Myringotomy and Middle Ear Flush



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Instrumentation

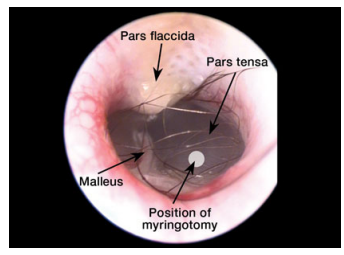


Hand held otoscope or video-otoscope?

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Middle ear irrigation and myringotomy



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Culture Contents of Bulla






1-2 ml


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Post Ear Flushing

- Common complications
- Pain medications post ear flush
- Post flush Synotic instillation and for days post
- 4-8 weeks of oral antibiotics and topical if possible
- Cytology will determine concurrent treatment of *Malassezia*
 - *Itraconazole 5 mg/kg orally once daily*


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Major Take Home Points

- URI and/or sinusitis in cats predisposes them to OM
- Increasingly polyps are recognized as the result of prior URI and/or OM
- OE may not be present in many cats with OM
- Untreated OM can lead to brain infection
- Medical management needs to address sinusitis and OM
- Medical and surgical treatment may be needed in some cats

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Thanks for your attention!



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