




## Pathology and Wound-ID Case Review

- Patient had tender nodule (growth of abnormal tissue) after rotator cuff repair and Wound-ID sample sent to rule out Pyoderma (bacterial infections of the skin), invasive fungal and mycobacterial infection.
- Other half of sample sent for Tissue Pathology diagnosis.
- Wound-ID diagnosed primary infection was Pseudomonas and due to the potential seriousness of a Pseudomonas infection, treatment should be aggressive and monitored closely for treatment effectiveness. Other pathogens detected are considered normal flora of the skin and of a wound.
- Pathology findings confirmed: **ABSCESS WITH PYOGENIC BACTERIAL ORGANISMS**
- Dr. Morgan summarized this as a “correlative report with an amalgam of traditional and molecular techniques wedded to compel the physicians to utilize both of our integrated services.”

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	PHYSICIAN INFORMATION	PATIENT INFORMATION
	<p>*****, MD  Dermatology -  *****  Suite 100  Bradenton, FL 34210  987-654-3210</p>	<p>DOB: XX-  XX-1921  Age: 100  Sex: Male</p>


**DERMATOPATHOLOGY REPORT**

<p><b>Collection Date:</b> 07/07/2021  <b>Received Date:</b> 07/07/2021  <b>Reported Date:</b> 07/14/2021</p>	<p><b>Accession #:</b>  <b>MRN:</b></p>
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**FINAL DIAGNOSIS**

**SKIN, L ANT SHOULDER -  
ABSCCESS WITH PYOGENIC BACTERIAL ORGANISMS.  
SEE COMMENT.**

**Comment: Molecular (KorPath) results show 3+ Pseudomonas sp with 2+ Enterococcus sp, consistent with the diagnosis. PAS-F, GMS, Fite and AFB special stains for infectious agents are negative (control slides stain appropriately).**



**Michael B. Morgan, MD**  
\*\*Electronically Signed on 14 JUL 2021 8:29AM\*\*

**SPECIMEN DESCRIPTION:**

**CLINICAL DATA:**  
L ANT SHOULDER - TENDER NODULE AFTER ROTATOR CUFF REPAIR, R/O PYODERMA, INVASIVE FUNGAL, MYCOBACTERIAL INFECTION, 1/2 SENT FOR TISSUE ID

**GROSS DESCRIPTION:**  
Received in formalin is a skin shave biopsy measuring 0.7 cm in greatest dimension. The specimen is bisected and entirely submitted in one cassette.

**ICD/CPT CODES:** L02.91/88305, 88312x4

KorPath, LLC  
3110 Cherry Palm Dr Suite 340 Tampa, FL 33619  
Phone: (813) 932-0374 Toll Free: (855) 470-7284  
Fax: (813) 931-0658 CLIA: 10D0699501 CAP: 2743001



**PHYSICIAN INFORMATION**

\*\*\*\*\* , MD  
Dermatology  
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Suite 100  
Bradenton, FL 34210  
987-654-3210

**PATIENT INFORMATION**

DOB: XX-  
XX-1921  
Age: 100  
Sex: Male

**DERMATOPATHOLOGY REPORT**

**Collection Date:** 07/07/2021

**Received Date:** 07/07/2021

**Reported Date:** 07/14/2021

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**MICROSCOPIC DESCRIPTION:**

A collection of neutrophils is present in the dermis.

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Email: info@korpath.com



Patient Name	 Date of Birth	 Gender	 Race
	XX-XX-1945	F	UNDISCLOSED

### Facility Information

**Ordering Provider:**  
**Facility:**  
**Facility Phone:** 9419275178  
**Facility Fax:** 19419216838

### Specimen Information

**ACC:**  
**Collection Date:** 07-07-2021      **Report Date:** 07-09-2021  
**Received Date:** 07-09-2021      **Sample Type:** Wound Swab  
**Notes:**

## Laboratory Results

### PATHOGENS DETECTED

Pseudomonas aeruginosa	1 x 10 <sup>3</sup> copies/uL	83.333%
Enterococcus faecalis, faecium	1 x 10 <sup>2</sup> copies/uL	8.333%
Prevotella spp.	1 x 10 <sup>2</sup> copies/uL	8.333%

### RESISTANCE GENES DETECTED & POTENTIAL MED CLASS AFFECTED

No resistance genes detected

**ABXAssist™**

**Pharmacy Guidance Provided by:**



Electronically approved on 07-10-2021 by: David Kelley  
•Email: pharmconsult@vikorscientific.com • Phone: 1-855-742-7635, 1-855-PharmD5

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Drug Allergies:	CYMBALTA REGLA
Notes from Ordering Physician:	L OUT SHOULDER

**MEDICATION  
REVIEW**

The therapy guidance listed in the ATA report is based on infectious disease references, the organisms detected, and genes known to contribute to medication resistance. Important clinical information such as comorbidities, renal function, ect. may influence the overall appropriateness of therapy. The provided guidance only takes drug allergies into account when they are provided. The overall appropriateness of therapy must be determined by the physician treating the patient, this report is for educational purposes only. The provider should take the entire clinical presentation into account when making treatment decisions. All recommendations are scientific based, evidence based, reports from known national data sources.

Due to the potential seriousness of a Pseudomonas infection, treatment should be aggressive and monitored closely for treatment effectiveness. Treatment recommendations include levofloxacin, piperacillin/tazobactam, cefepime, and meropenem.

Enterococcus is considered normal flora in wounds and is not typically treated until upper-moderate to high loads are reached. If treatment of low-level Enterococcus is warranted, may use Augmentin / Unasyn, Levaquin, Linezolid, Daptomycin, topical Neosporin (good Enterococcus coverage) or topical Mupirocin (reserve if possible as resistance is increasing).

Peptostreptococcus, Peptoniphilus, and Prevotella are part of the normal flora of skin and mucous membranes and are often recognized as culture contaminants. These organisms have low virulence but could produce infections of the bloodstream and other sites in severe disease, especially in immunocompromised patients and those with the presence of foreign devices (such as intravascular catheters or prosthesis). Coverage includes amoxicillin/clavulanate or metronidazole or clindamycin.

Medication	Route	Dose
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**FIRST LINE** → levofloxacin      oral      PO/IV 500 mg - 750 mg daily x 7-14 days

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Considerations: (Pseudomonas, Enterococcus, Prevotella)

Fluoroquinolones have been associated with serious and possible irreversible reactions; tendonitis/tendon rupture, peripheral neuropathy, CNS effects. These may occur all together or months after tx. Increased risk in patients over 60 and pt on corticosteroids. Avoid in Myasthenia Gravis. Reserve for pts with no alternative tx options for acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, or uncomplicated UTI. Adjust dose for CrCl <50ml/min. Not recommended in children under 18 y/o. Not first line agent in children with complicated UTI or pyelonephritis.

**SECOND LINE** → piperacillin / tazobactam      intravenous      3.375g q8h x 7-14 days

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Considerations: (Pseudomonas, Enterococcus, Prevotella)

Adjust dose for renal function CrCl < 20 mL/min to q12h.

**ALTERNATIVE** → vancomycin      intravenous      15-20 mg/kg q8h, adjust dose and frequency based on renal function

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Considerations: (Enterococcus)

Monitor trough levels with a goal of 10-15 for cellulitis or 15-20 for osteomyelitis.

AND

cefepime      intravenous      1-2g q8h x 7-14 days

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Considerations: (Pseudomonas, Prevotella)

Adjust dose per renal function

Methodology	The infectious disease and antibiotic resistance detection panels are tested utilizing Real-time PCR technology to detect the presence of genes associated with pathogens and antibiotic resistance via amplification of genomic DNA. Amplification and detection are performed using the Applied Biosystems™ QuantStudio™ 12K Flex Real-time PCR system, which includes the QuantStudio™ 12k Software v1.3 and Thermo Fisher Scientific TaqMan™ assays. The assays are preloaded onto TaqMan™ OpenArray plates.
Limitations	This test only detects microorganisms and antibiotic resistance (ABR) genes specified in the panel. ABR genes are detected in the specimen and are not specific to a detected pathogen. ABR genes may be detected in bacterial strains not tested for in the panel.
Disclaimer	The resistance genes for Ampicillin, selected Extended-Spectrum-BetaLactamases, Vancomycin, Carbapenems, Sulfonamide, Trimethoprim, Aminoglycosides and the Quinolone gyrase groupings are assays customized by pooling the individual genes listed in the associated group. If listed as positive, this indicates that at least one of the genes in the group was detected and the class of medication could have potential resistance.
	This test was developed and its performance characteristics determined by Korpath™. It has not been cleared or approved by the FDA. The laboratory is regulated under CLIA as qualified to perform high complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research. Pharmacy guidance and recommendations therein are not under the purview of the laboratory or agencies which accredit the laboratory.

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Patient Name



Date of Birth

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Gender

F



Race

UNDISCLOSED

The treatment guidance listed in the report is based on infectious disease treatment references, the organisms detected, and genes known to contribute to medication resistance. Important clinical information such as comorbidities, renal function, patient weight, platelet count, microbiology results, etc. may influence the overall appropriateness of therapy. The provided guidance only takes drug allergies into account when they are provided and available to the pharmacist making the recommendation. The overall appropriateness of therapy must be determined by the physician treating the patient. The provider has all the patient information necessary to make that determination and should take the entire clinical presentation into account when making treatment decisions. Should the treating physician wish to discuss the provided guidance, the pharmacist is available for consult at the email and phone number provided.

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### NEGATIVE PATHOGENS

- Acinetobacter baumannii
- Anaerococcus vaginalis
- Aspergillus fumigatus, niger, terreus, versicolor
- Bacteroides fragilis
- Bartonella henselae
- Campylobacter coli, jejuni
- Candida albicans, glabrata, tropicalis, parapsilosis
- Candida auris
- Citrobacter freundii
- Clostridium botulinum
- Clostridium difficile Toxin A/B
- Clostridium perfringens
- Corynebacterium jeikeium, striatum
- Enterobacter spp.
- Enterohemorrhagic E. coli (O157)
- Enteroinvasive E. coli
- Enteropathogenic E. coli
- Enterotoxigenic E. coli
- Escherichia coli
- Fusobacterium nucleatum, necrophorum
- HPV 16
- HPV 18
- Haemophilus influenzae
- Herpes zoster virus (Varicella zoster virus)
- Klebsiella oxytoca, pneumoniae
- Listeria monocytogenes
- Morganella morganii
- Mycobacterium abscessus
- Mycobacterium fortuitum, chelonae
- Mycobacterium kansasii
- Mycobacterium marinum
- Mycobacterium tuberculosis
- Mycobacterium ulcerans
- Mycoplasma genitalium, hominis
- Pasteurella multocida
- Peptoniphilus harei and ivorii
- Peptostreptococcus prevotii, anaerobius, asaccharolyticus, magnus
- Proteus mirabilis
- Salmonella enterica
- Serratia marcescens
- Staphylococcus aureus, enterotoxins A/B
- Staphylococcus haemolyticus, lugdunensis
- Streptococcus agalactiae
- Streptococcus pneumoniae
- Streptococcus pyogenes
- Trichophyton rubrum
- Trichophyton soudanense, violaceum
- Trichophyton tonsurans, interdigitale
- Vibrio cholerae, parahaemolyticus, vulnificus
- Yersinia enterocolitica

### NEGATIVE RESISTANCE GENES

- aac6-1b/aacA4, ant(3), aph(A6), aac6-1b-cr
- ampC, ACC, DHA, ACT/MIR
- SULL, DFRA
- CTX-M group 1, group 2, group 9, group 8/25, PER-1, PER-2, VEB, blaNDM-1, OXA-1, GES, SHV
- OXA-23, OXA-72, OXA-40, OXA-58, IMP-16, NDM, blaOXA-48, OXA-48, KPC, VIM, IMP-7
- TEM, TEM E102K, TEM R162S, TEM G238S
- ErmC, ErmB, ErmA
- mecA
- mcr-1
- QnrB, Gyrase A D87N\_GTT, Gyrase A S83L\_TGG, QnrA
- tetM
- VanB, VanA1, VanA2

### ANTIBIOTIC CLASS

- Aminoglycosides
- Ampicillin
- Bactrim
- Beta-lactams
- Carbapenems
- Extended - Spectrum - Betalactamases
- Macrolides
- Methicillin
- Polymyxins
- Quinolones
- Tetracycline
- Vancomycin



**\*\*SAMPLE REPORT\*\***

**This report, associated with order # has been approved by the following reviewers:**

**Pharmacist:**

Electronically signed and dated on 07-09-2021 21:12  
David Kelley

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**Report Reviewer:**

Electronically signed and dated on 07-10-2021 09:36  
Lawrence Rushdi

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