

Ventral Skull Base Osteomyelitis: A Case Series from a Tertiary Care Center Over 5 Years

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Introduction

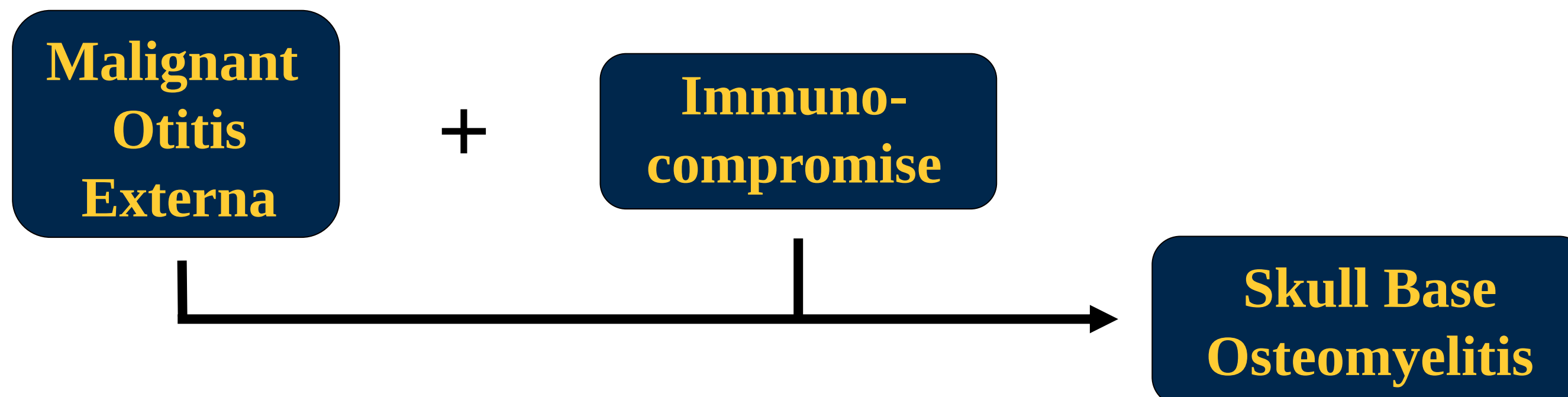
Motivations

- Ventral skull base osteomyelitis (VSBO) can be easily missed and/or misdiagnosed.
- VSBO is rare with vague symptoms and radiographic findings that can overlap with other sinonasal pathology.
- Patients may undergo invasive and/or unnecessary treatments prior to definitive diagnosis.

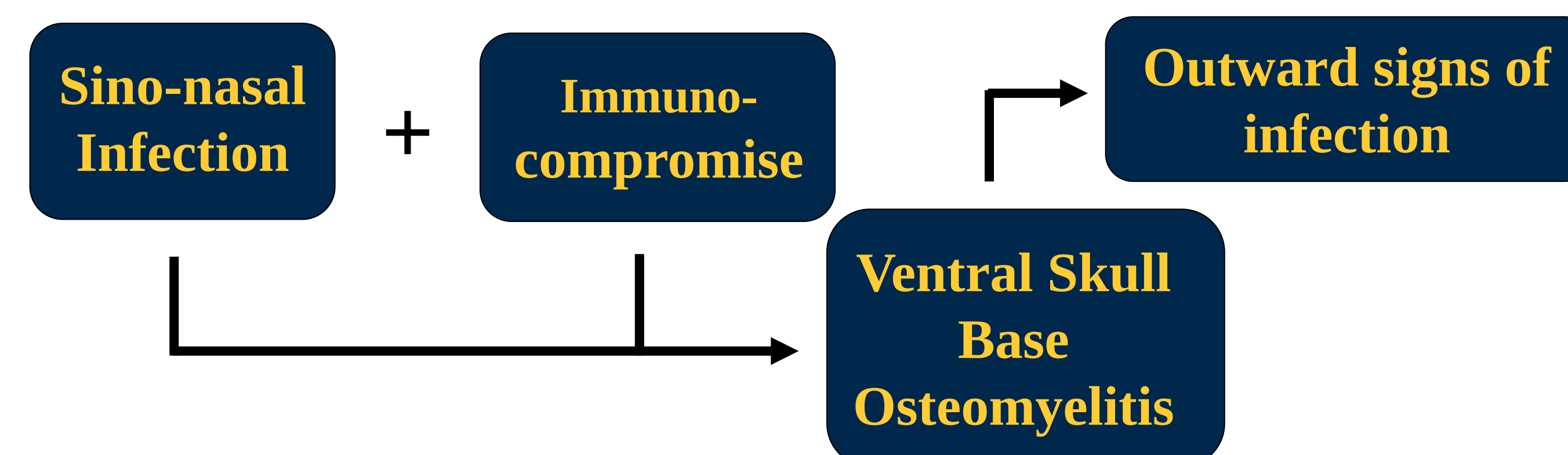
Primary Goals

- Document and propose a new “inside-out” mechanism for skull base osteomyelitis (SBO).
- Establish a baseline set of patients from which to further investigate VSBO and inform practitioners about this unique presentation.

Traditional Mechanism



Proposed “Inside-out” Mechanism



Patient Selection Criteria

EMR
Patient
Database
Search

Diagnosis of SBO



119
Patients
with SBO

Individual Chart
Review and Exclusion



7
Patients
with VSBO

Exclusion Criteria

- Temporal bone osteomyelitis
- Surgical site infections
- Clinically apparent otitis externa

Presentation and Management

- Seven patients (5M/2F, ages 63-87) were identified as having VSBO
- Diagnostic imaging findings typically included a nasopharyngeal mass and/or clival enhancement
- Biopsy with culture was used for definitive diagnosis – three patients underwent biopsy without culture requiring repeat biopsy.

Presenting Symptoms

- Fever
- Jaw pain
- Otagia
- Intractable headache
- Abducens Neuropathy
- Trigeminal Neuropathy
- Vestibulocochlear Neuropathy

Documented Misdiagnoses

- Migraine
- Temporal arteritis
- Trigeminal neuralgia
- Periorbital cellulitis
- Sinonasal/skull base cancers

Pre-diagnosis Treatments

- Steroid Bursts (2)
- Narrow-spectrum antibiotics (4)
- Anticonvulsants (1)
- Surgical Biopsy (3)
- Debridement (2)

Cultured Organisms

- Staphylococcus (MRSA, MSSA)
- Coag-neg Staphylococcus
- E.Coli
- Parvimonas
- Eikinella
- Pseudomonas

Presentation and Management (cont.)

Treatments

- IV Ertapenem (~6 weeks) with adjunct oral antibiotics
- Surgical debridement (2 patients)

Outcomes

- All patients survived and saw infection resolution
- 5 patients experienced long term neurologic sequelae including:
 - Hearing loss (3)
 - Dizziness/balance disturbances (3)
 - CN VI palsy (1)
 - Persistent hoarseness (3)

Conclusion

- Seven patients demonstrate an “inside-out” mechanism of developing VSBO – arising from a sinonasal origin, not a traditional otologic origin
- The rare and vague presentation of VSBO increases the chances of misdiagnosis and delayed definitive treatment
- Awareness of the disease and inclusion of MRI, sinonasal biopsy, and tissue cultures when investigating nasopharyngeal masses can help expedite diagnosis and definitive treatment.
- Rapid recognition and diagnosis can greatly reduce disease progression and possible irreversible and disabling neurological sequelae.

Acknowledgements

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Figure 1: Traditional and inside-out model of skull base osteomyelitis.