

Incidence of Iodide Mumps Associated With Iodinated Contrast Media: A Retrospective Analysis



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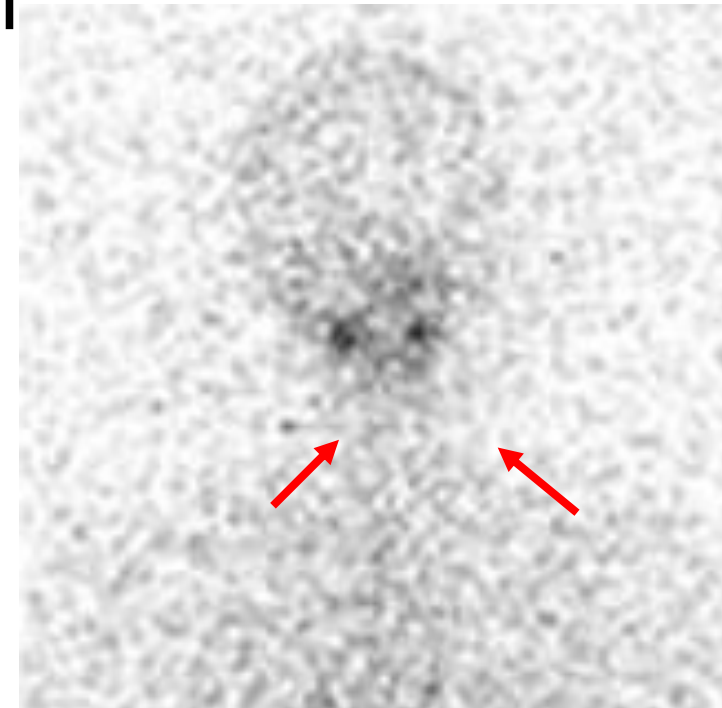
What Is Iodide Mumps?

- Transient salivary gland swelling after iodinated contrast
- Occurs within several to several dozen hours
- Pain present in about 50% of cases; no systemic symptoms
- Usually bilateral
- Usually resolves spontaneously without treatment

What Is Iodide Mumps?

The mechanism remains unclear

- Higher contrast dose may increase risk
- No direct association with renal function
- Salivary glands and thyroid gland express sodium/iodide symporter (NIS)
- Iodide uptake may lead to temporary retention within salivary ducts



Index Case

Male patient in his 70s

Present illness

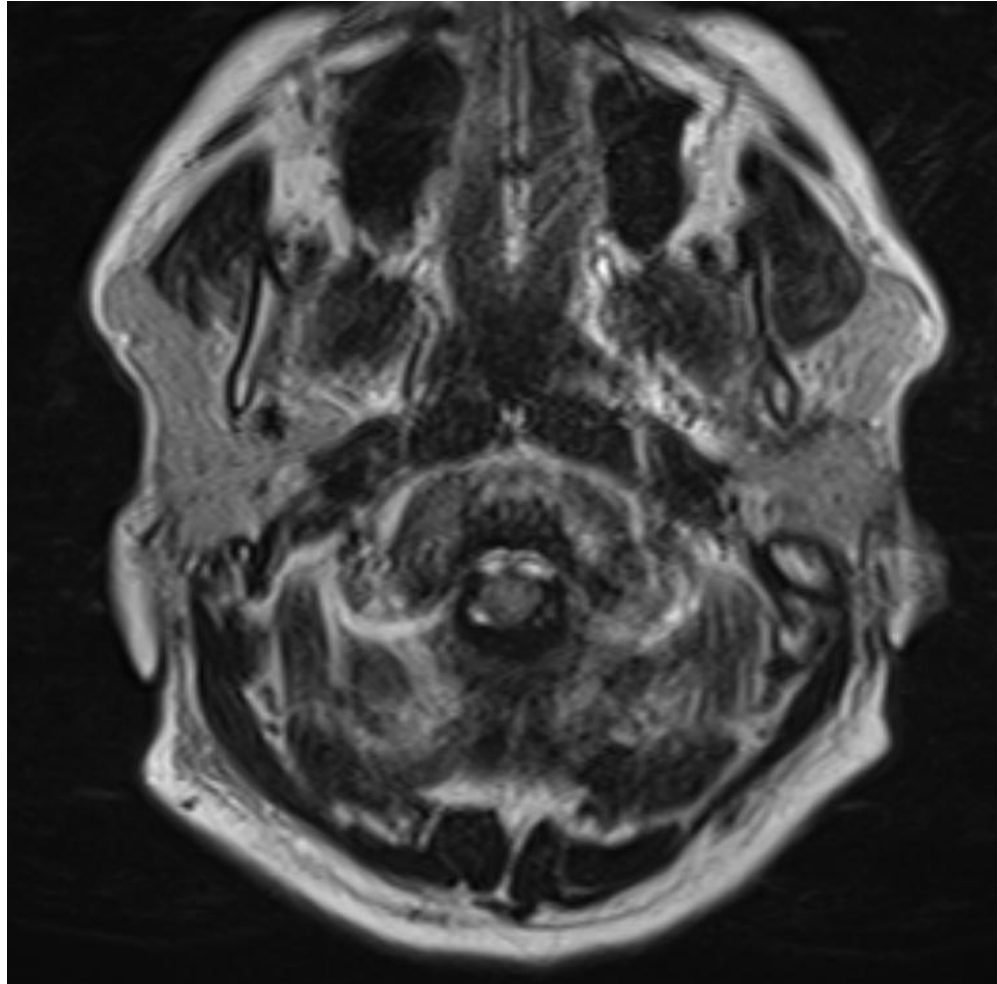
vomiting, impaired consciousness, fever,
upper abdominal pain

Day 1: unenhanced brain MRI / CE abdominal CT

Day 2: CE brain MRI

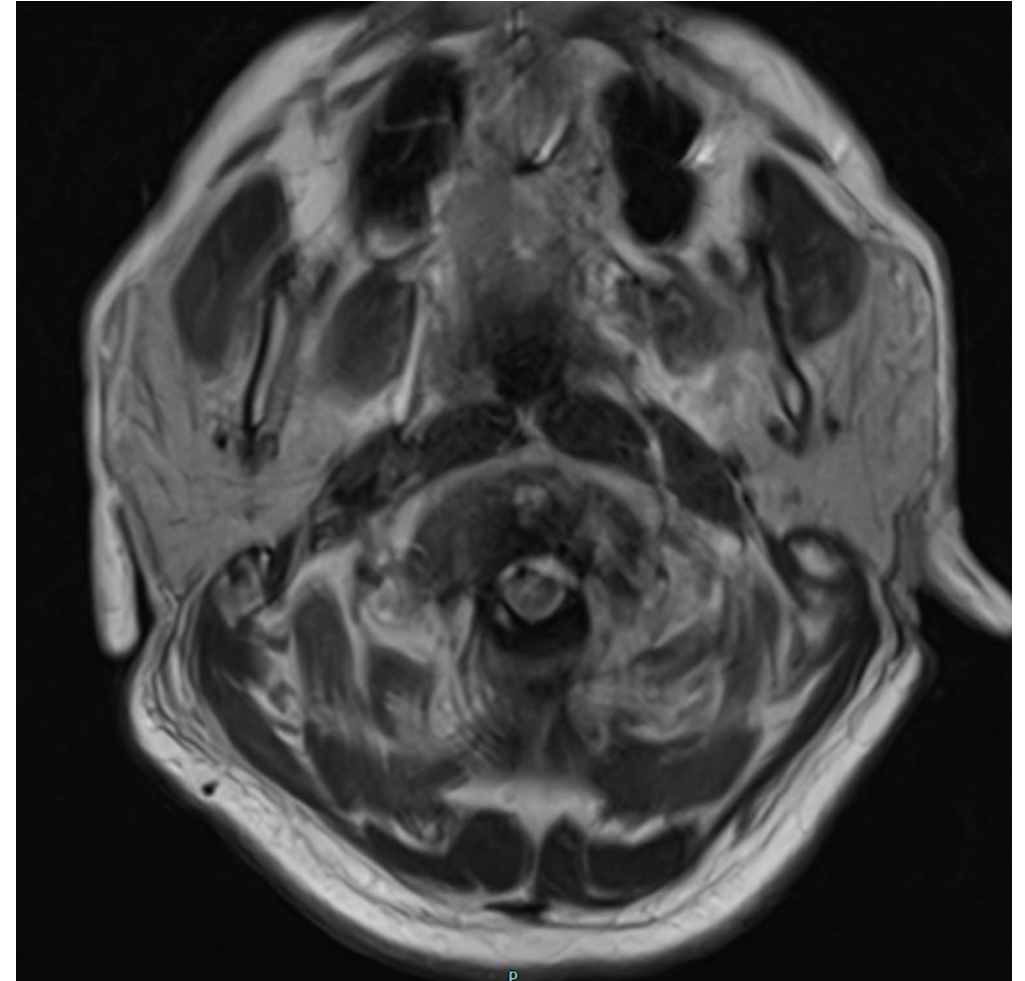
Index Case

Day 1



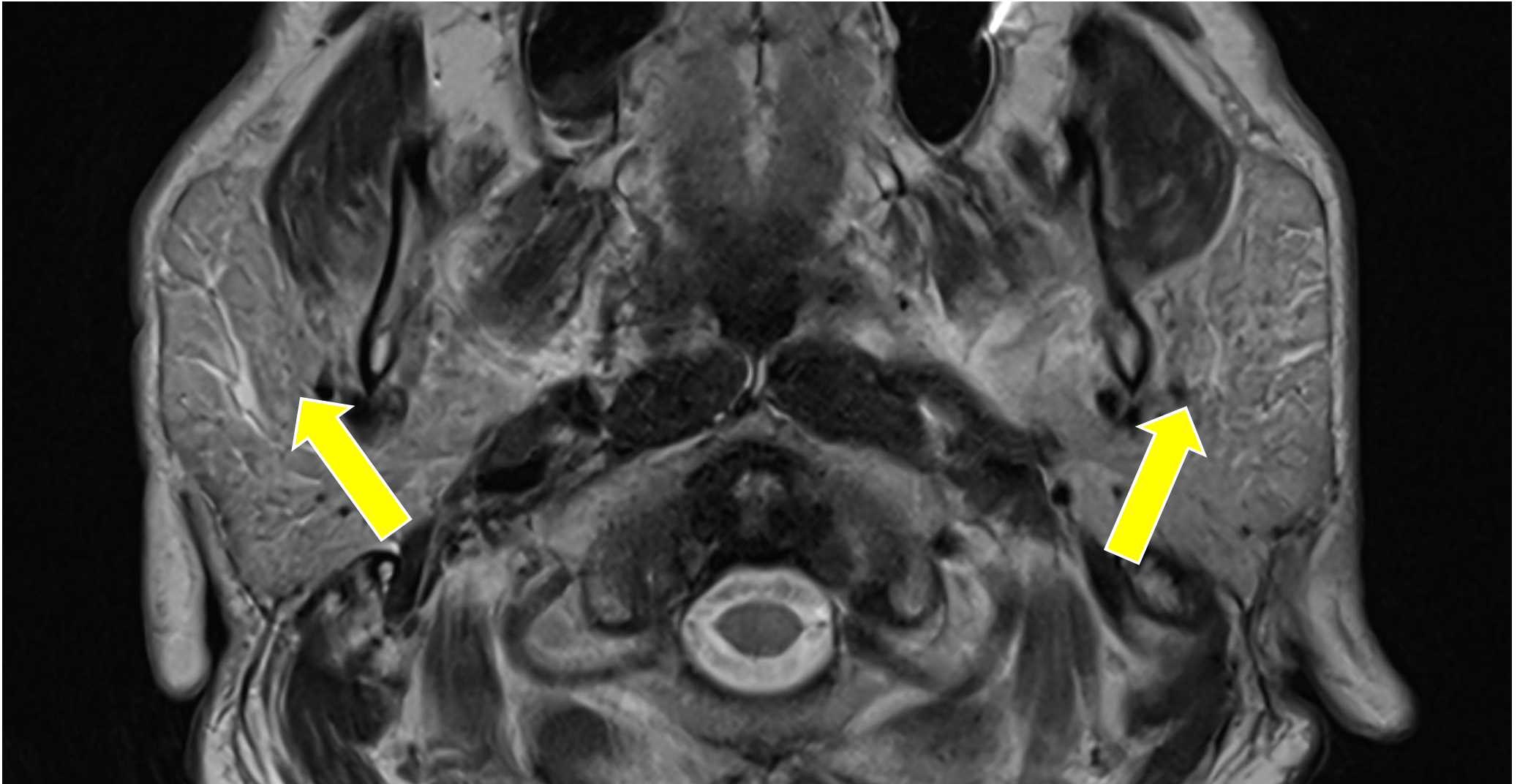
MRI (FLAIR)

Day 2



Index Case

MRI (T2WI) Day 2



Clues to the True Frequency of Iodide Mumps

Reported **incidence: 1%**

(prospective questionnaire study, n = 1,699; 1989)

McCullough M et al. The British Journal of Radiology. (1989)



Iodide mumps rare in daily practice

Our institution: 620 CTs/week, including 260 CECTs/ week

Expected at 1%: 2–3 cases/ week (~10 cases/ month)

Actually : rare

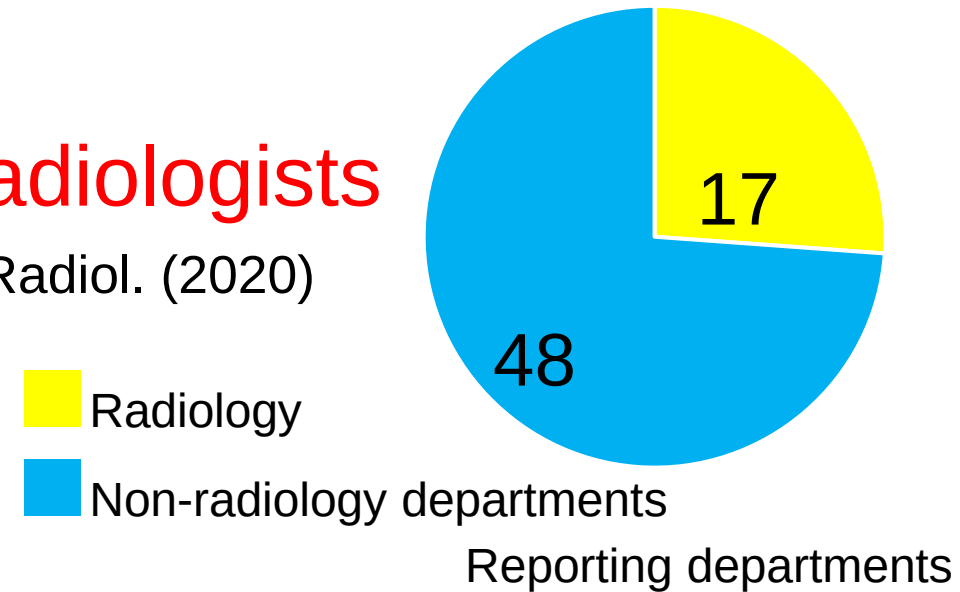
Is the frequency really 1% ?

Iodide mumps: Rare or Under-recognized?

Meta-analysis of 65 case reports

→ Many cases reported by **non-radiologists**

Jiao A et al. Acad Radiol. (2020)



4 cases diagnosed in emergency department over 2 months

→ All diagnosed by **otolaryngologists**

Saro-Buendía M, et al Acta Otolaryngol. (2023)

Under-recognized by radiologists?

Purpose

To determine the incidence of iodide mumps based on imaging findings

Methods

- Retrospective review of post-contrast CT/MRI
(January 1, 2015–August 31, 2019)
- Examinations obtained day after iodinated contrast administration
- Required visualization of $\geq 50\%$ of one or both parotid/submandibular glands
- Compared with prior CT/MRI within 3 months
- Repeated studies counted separately only if >2 days apart

Result

896 examinations analyzed

Mean age: 63.1 ± 17.1 years (range; 3-93 years)

Definite case: 1

Suspected case: 2

→ Estimated frequency: 0.11-0.33%

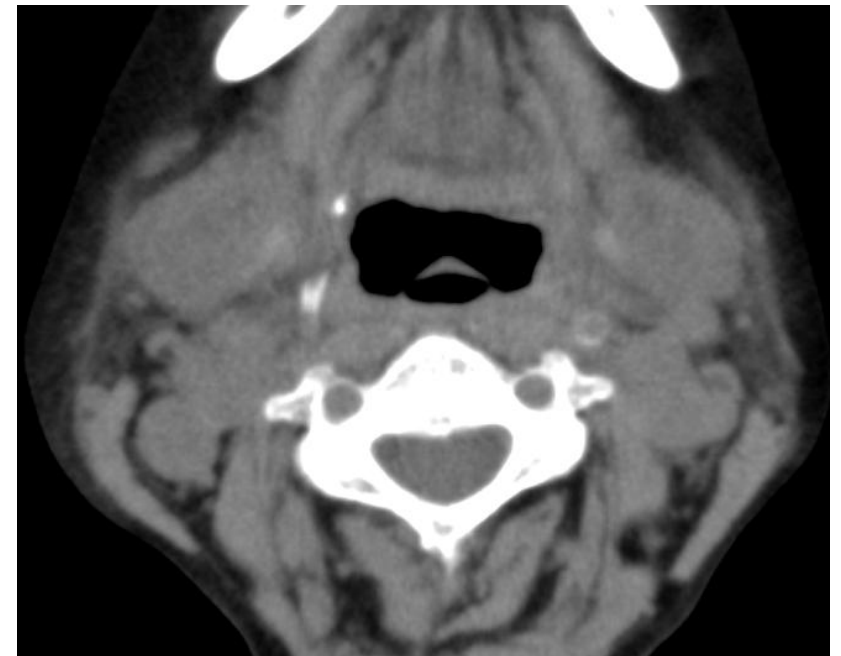
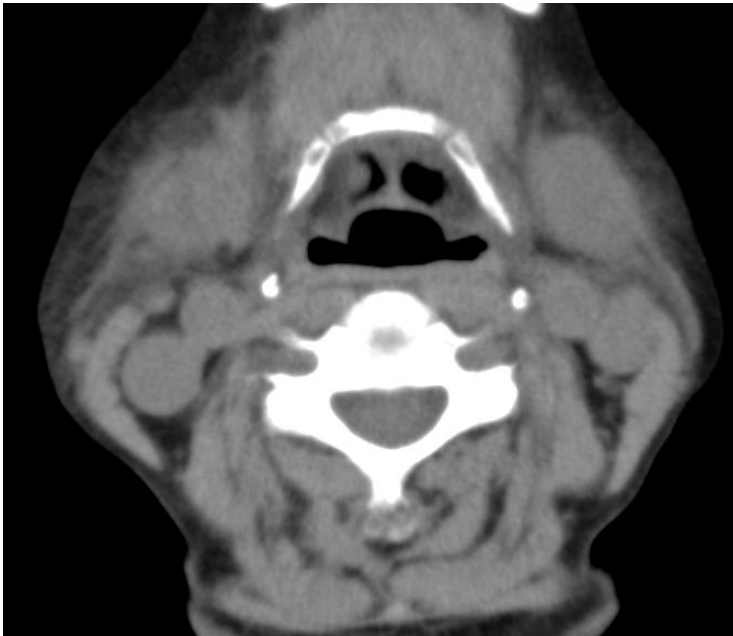
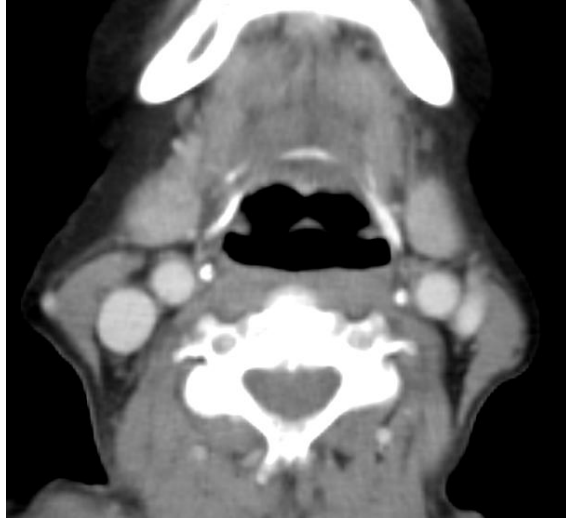
Result

Definite case

Contrast
enhanced CT

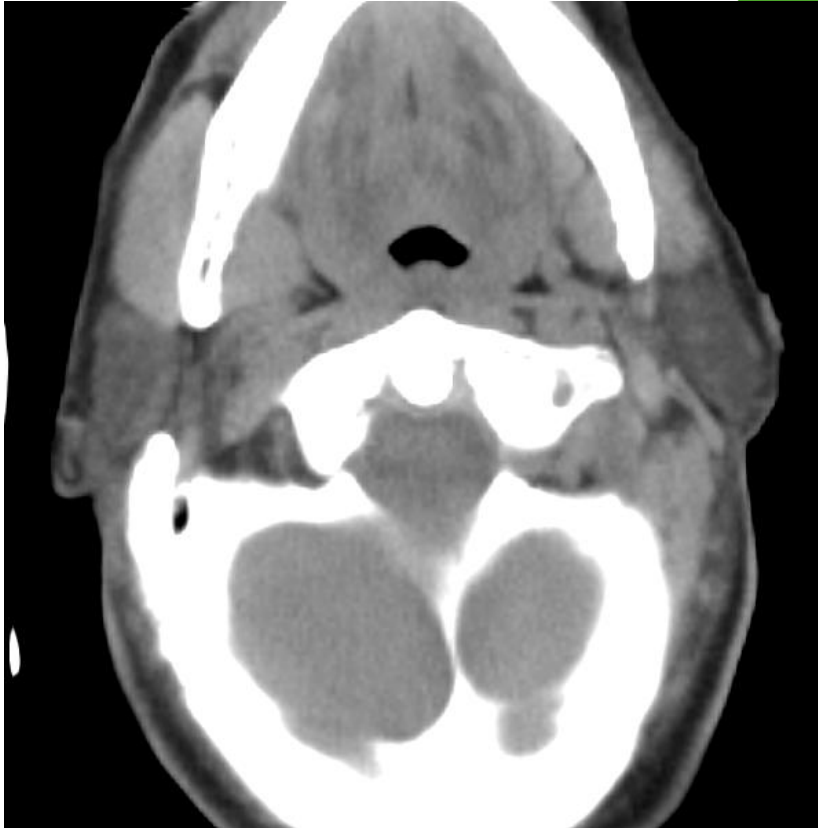


Next-day CT



Result

Suspected case



Pre contrast CT

CECT performed
between these
scans



Next-day CT

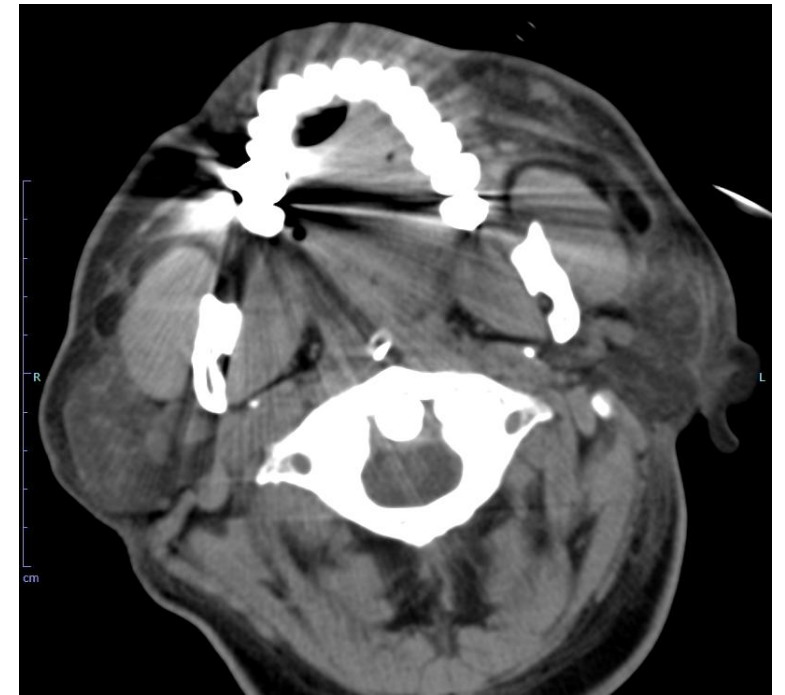
Result



Trauma patient

Facial trauma with hematoma

Possible influence of trauma and
hematoma



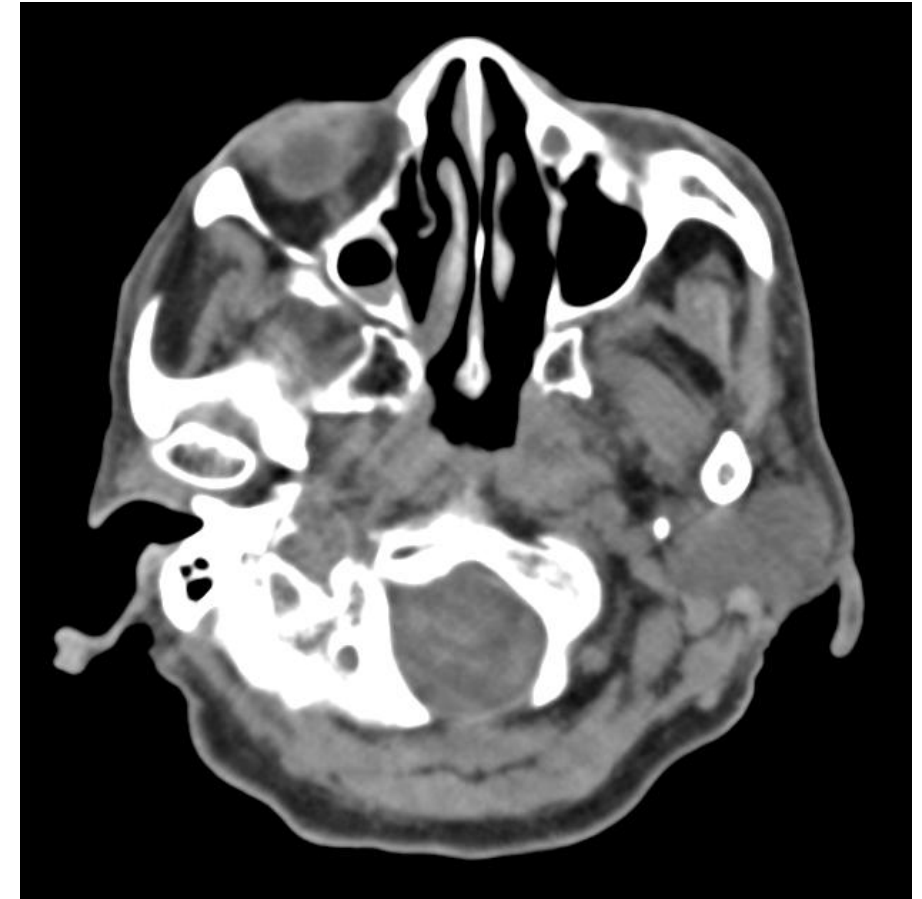
Result

Suspected case



Pre contrast CT

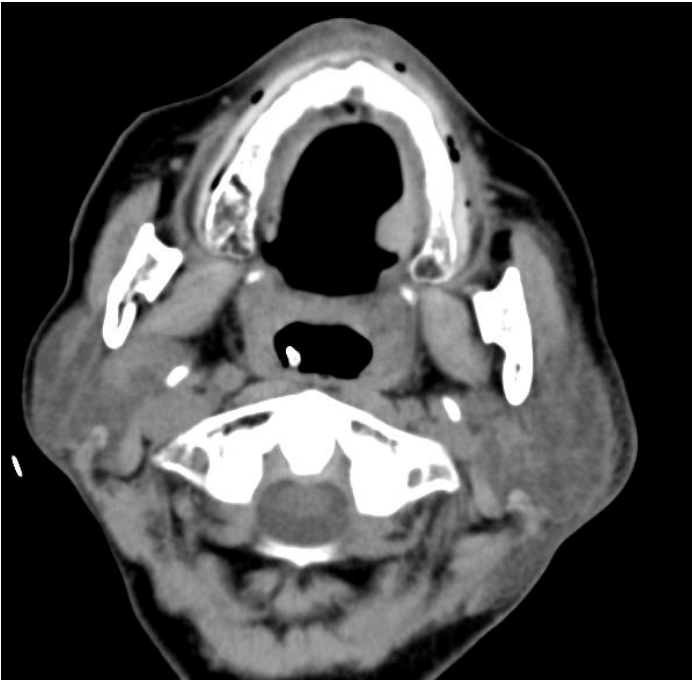
CECT performed
between these
scans



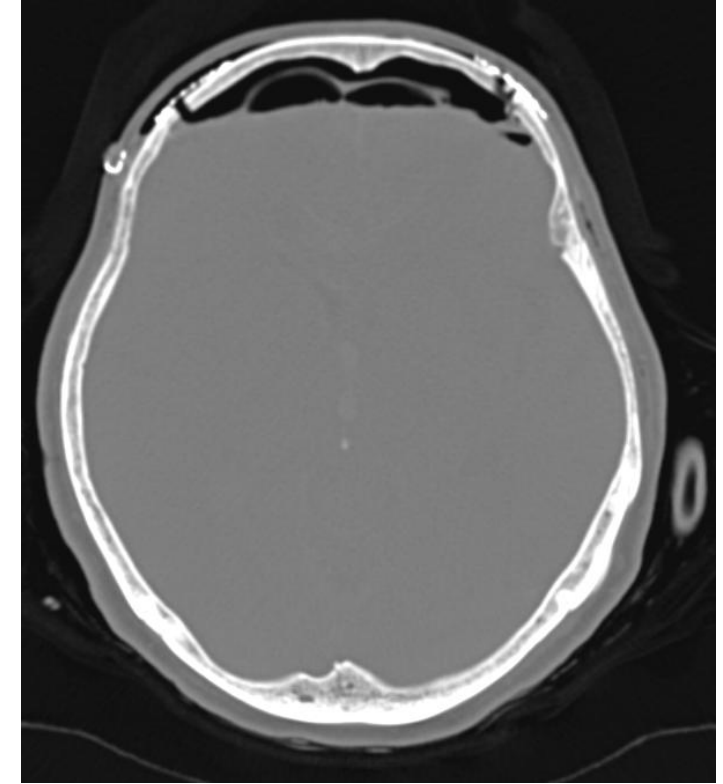
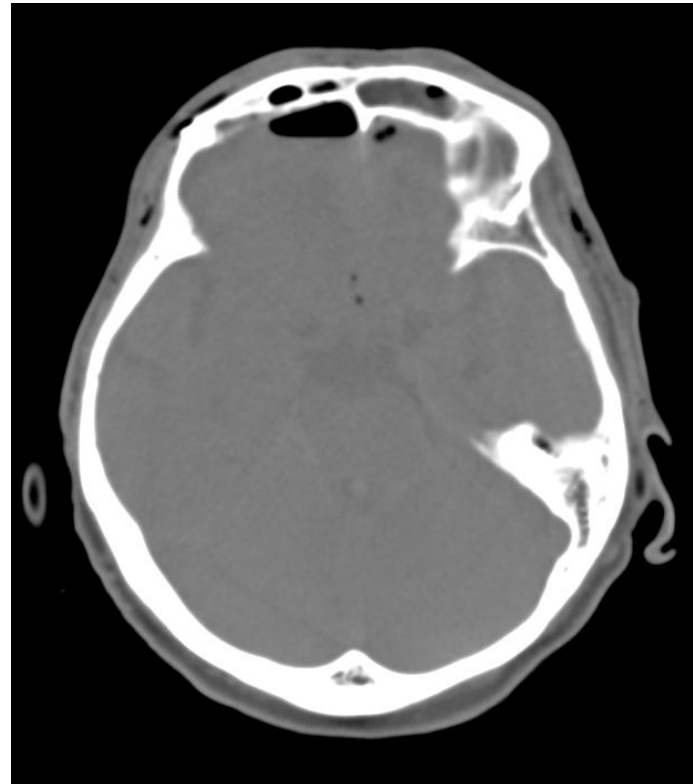
Next-day CT

Result

After hematoma evacuation for
intracerebral hemorrhage



CT 2 days after contrast



Discussion

Our findings may answer the initial question

1% seems too high for routine clinical practice

0.11% may be closer to true frequency



Still, 0.11% $\approx$ one case/month at our institution.....?

rarely recognized in daily practice

→ underdiagnosed?

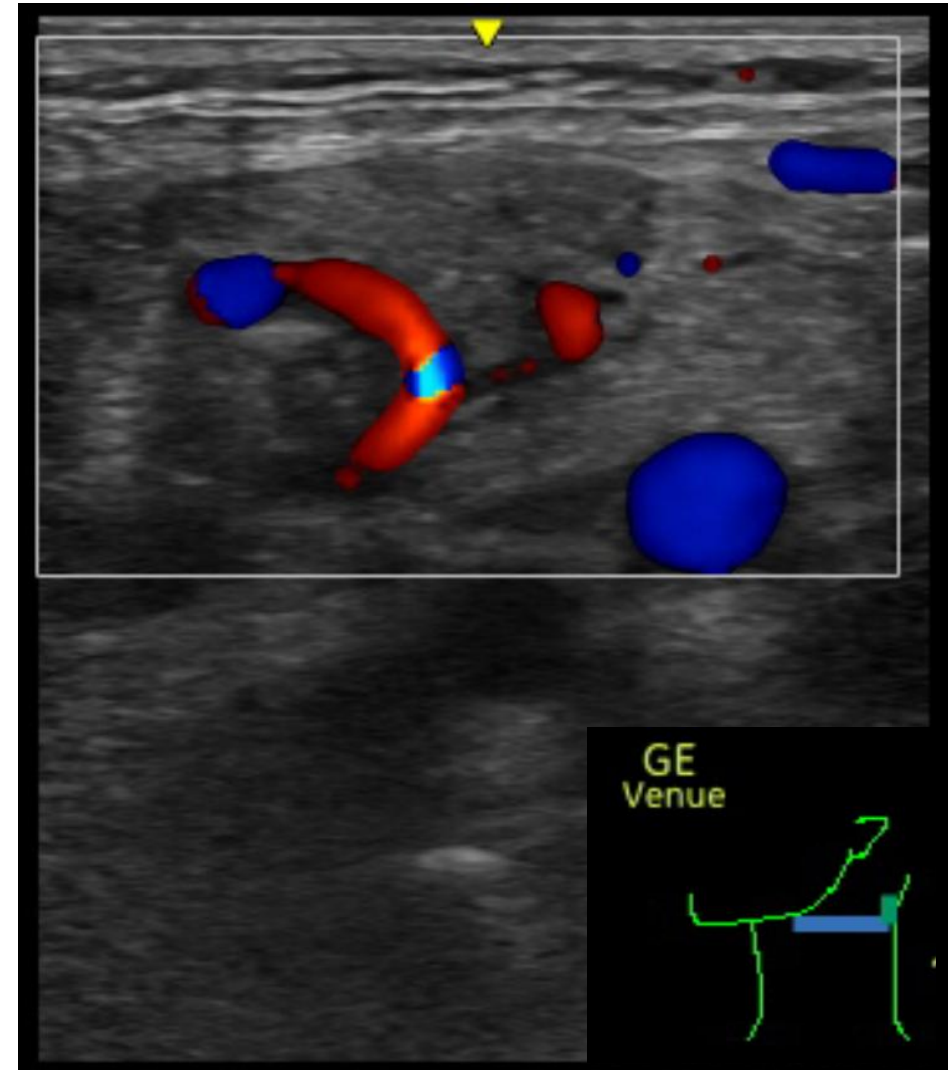
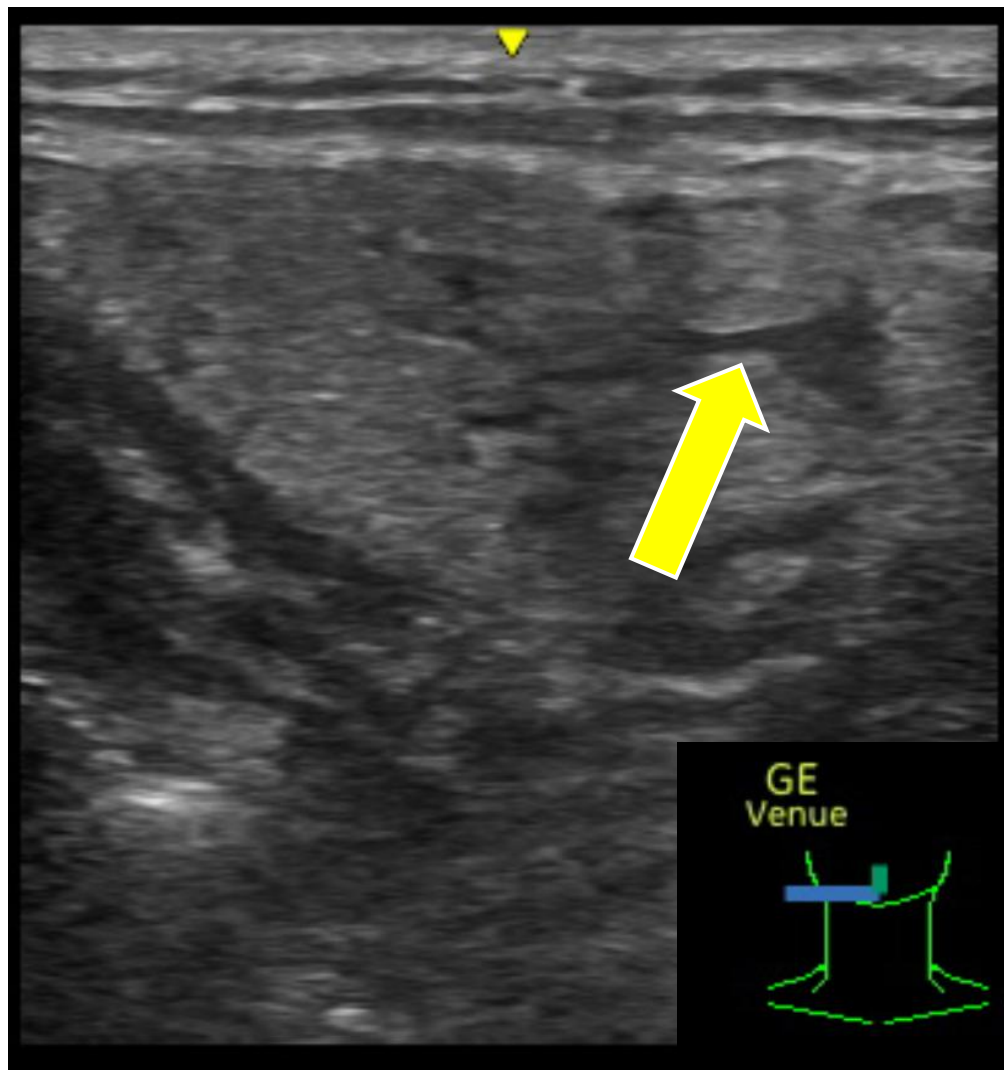
Some cases treated as salivary gland swelling of unknown cause?

Awareness may help reassure patients and avoid unnecessary additional work-up

Conclusion

- ◆ Iodide mumps is rare, but not negligible
- ◆ True frequency may be closer to 0.1%
- ◆ Awareness of this benign, self-limited reaction important in routine radiology practice

ultrasonography



Male patient in his 70s

Present illness

vomiting, impaired consciousness, fever, upper abdominal pain

Day 1: unenhanced brain MRI / CE abdominal CT

Day 2: CE brain MRI

Laboratory findings

Hb 10.4 g/dL, RBC $4.28 \times 10^{12}/L$, WBC 1,020/ μL , Na 137 mEq/L,
CRP 1.89 mg/dL, AST 39 U/L, ALT 44 U/L, LDH 305 U/L,
eGFR $\times 83 \text{ mL/min/1.73 m}^2$

Leukopenia with mild anemia, elevated CRP, mildly elevated liver enzymes