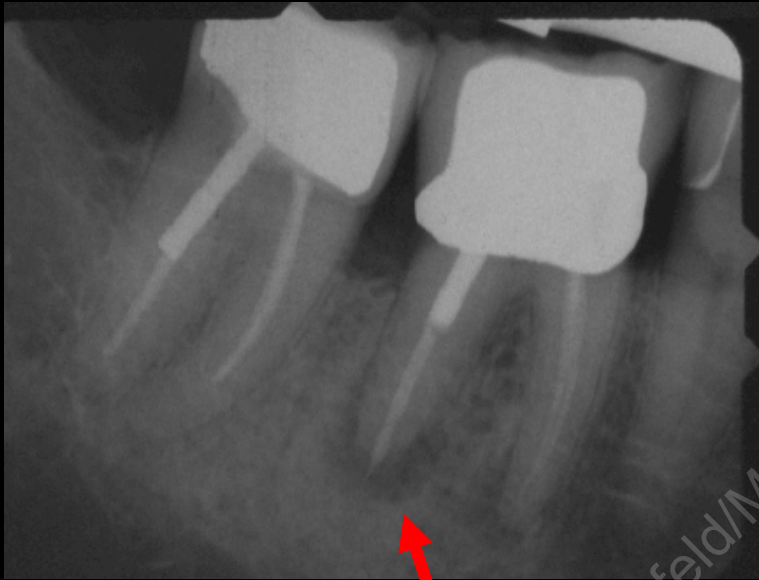


# Immediate implant placement

**Implant placement simultaneous with extraction of the mandibular first molar using CT guidance**

**Drs. Alan Rosenfeld and George Mandelaris**  
Diplomates, American Board of Periodontology

# Immediate implant placement



Initial X-ray: Infected tooth #30  
Failing root canal (red arrow)

Prognosis = Hopeless

Treatment = extraction + implant replacement



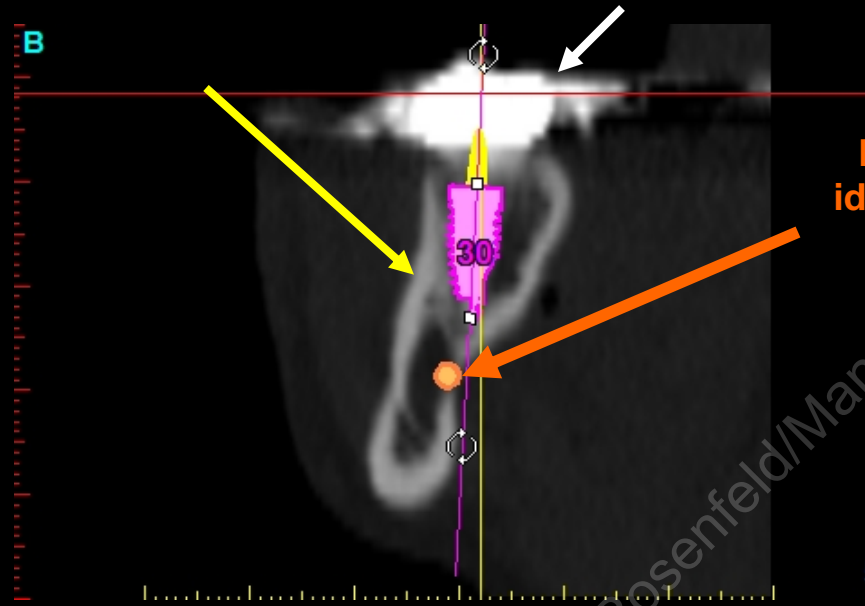
Initial clinical photo #30

Mandibular (lower) right first molar is present, but the root canal is failing and there is infection requiring tooth removal

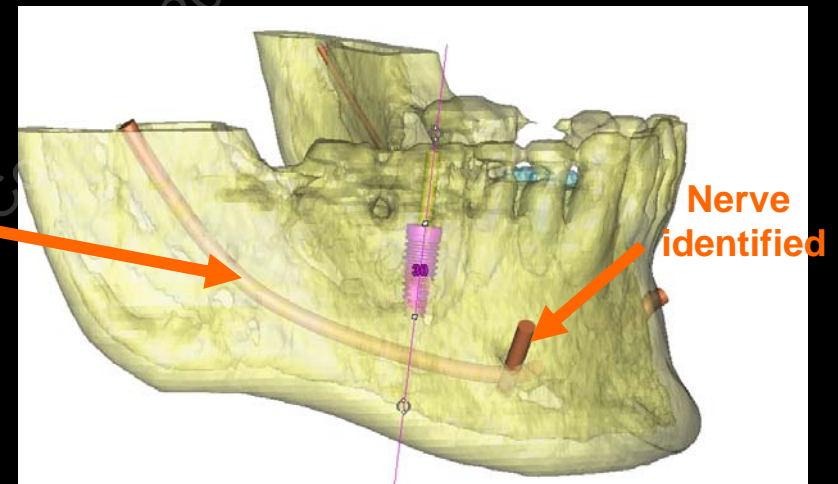
# CT scan diagnostic treatment planning

Patient's native bone

Tooth position



Virtual (3D) CT scan implant planning



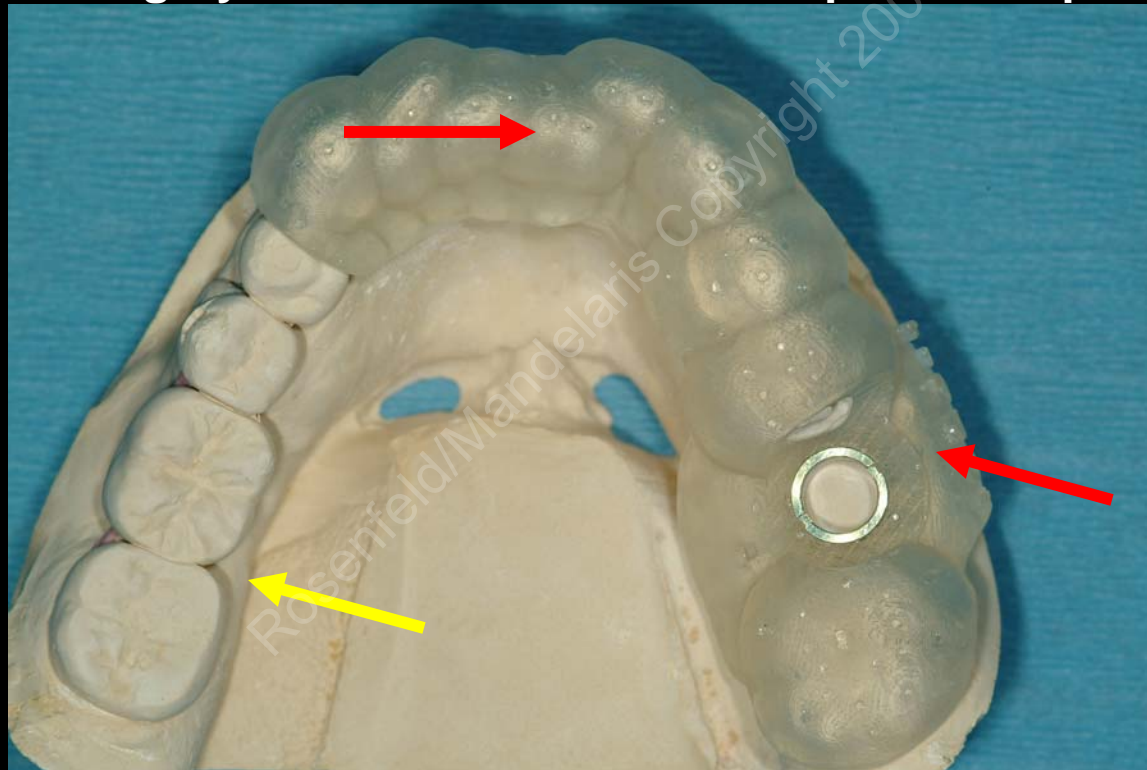
- Three dimensional reconstruction demonstrating planned implant positioning for this patient. Implant placement will occur simultaneous with the extraction of the hopeless tooth #30.
- One implant will be used to support a lower molar crown. Bone grafting will be required to account for the size discrepancy between the natural tooth root and dental implant. The implant will also help to maintain the remaining bone LONG-TERM.
- Position of nerve is highlighted in orange for safety in planning and in executing surgery.

- Cross section view of the implant position for #30. CT scan analysis allows Drs. Rosenfeld & Mandelaris to analyze the jaw bone anatomy, position of the nerve, and bone quality as part of the decision making process to determine the proper treatment plan for the patient. In this case, immediate implant placement was a viable option and was elected based on the needs and concerns for the patient.

# Tooth supported surgical guide fabricated from the CT scan plan

## CT Scan plan and 3D implant planning

CT guided surgery will be utilized to ensure precise implant placement

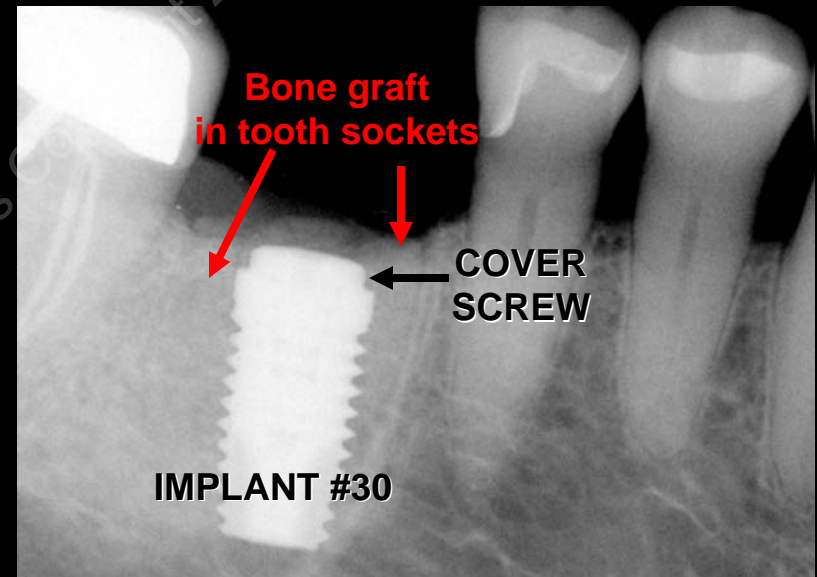


CT scan technology utilized to create a tooth supported guide (**red arrows**) which will seat on the patients remaining natural teeth at the time of surgery. A stone model which serves as a duplicate of the patient's teeth (**yellow arrow**) is used and combined with the patients customized CT scan plan to ensure precise, accurate, and safe implant placement.

# SURGERY



- Dissolving microsurgical sutures are placed to allow the tissue to heal properly.



- An X-ray is taken directly after surgery to verify implant position.

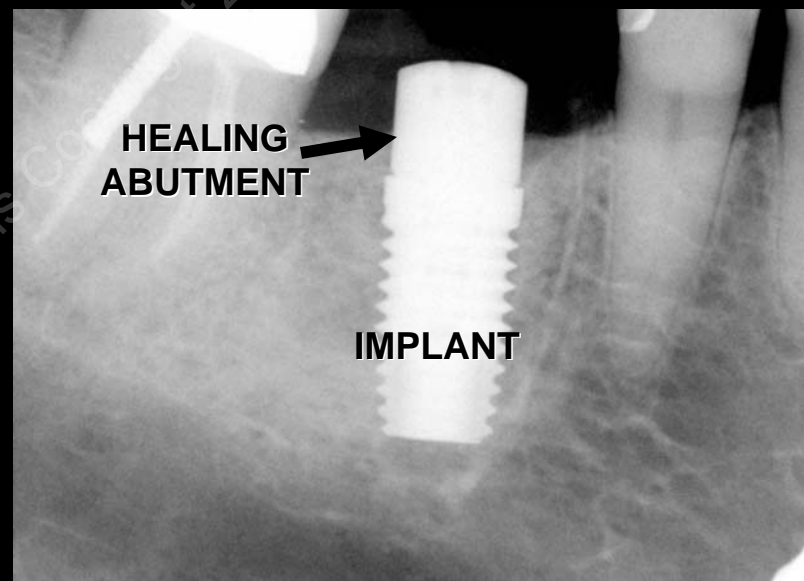


# Stage II surgery

## Healing abutment placed



- After a sufficient healing time has elapsed (typically 3-6 months), the implant is exposed & successful bone integration is confirmed in a second surgery. A healing abutment (“cap”) is then connected which minimally protrudes through the gum tissue.



- Xray taken after implant uncover. The Implant and healing abutment are dissected In this xray for patient education.

# The Laboratory Process (making the implant crown)



- When you are referred back to your dentist to complete the crown, an impression will be taken.
- This picture represents an implant replica (i.e. “analog” which has been placed into the a stone model. The stone model was made from the impression.
- The implant crown process now ensues by a laboratory technician who works closely with your dentist.

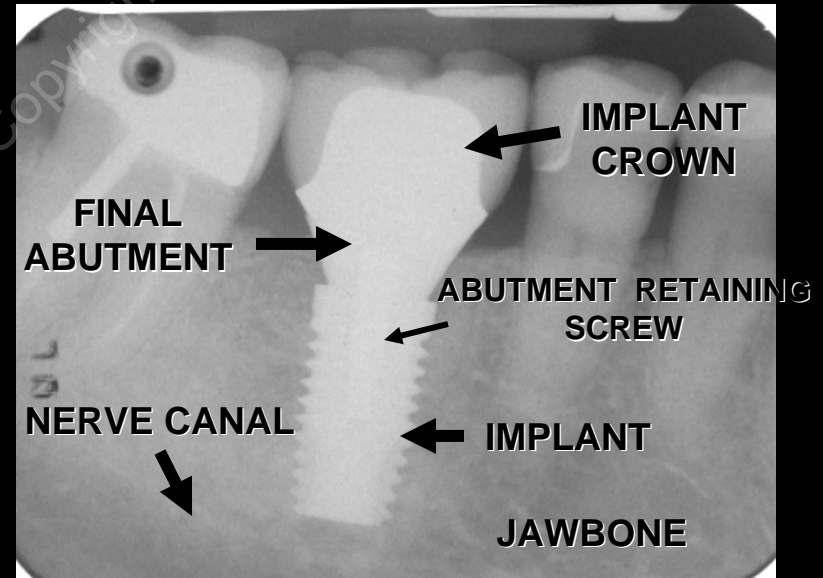
- An intermediate component is made, called a “final abutment” to which the implant crown is made to fit.
- The abutment attaches to the internal aspect of the implant by a small screw (red arrow).
- This picture represents a specific type of final abutment that was developed using CAD/CAM technology.

- A final crown is now made which will be cemented to the abutment.
- This picture represents a porcelain implant supported crown for #30.

# The Final Outcome



- The final crown (red arrow) is cemented to place & the patients bite is checked.



- The final Xray with the implant anatomy dissected for patient information and understanding



# Immediate implant placement #30

BEFORE



AFTER

