Dentocutaneous sinus tract presenting as a chronic discharging nodule in the skin overlying the jaw

Clinical History:
A 33-year-old male patient presented with a nodule in the right side of the face, close to the region of the angle of the mandible. He gave a history of intermittent purulent discharge from this nodule for the past 6 months. The discharge had persisted even after a course of topical/oral antibiotics.

Imaging Findings:
On physical examination a nodule with a central opening and puckering of surrounding skin was seen in the region of the jaw on the right side. He was referred for CT of the mandibular region to assess the extent of soft tissue involvement and possible bony involvement.
On CT, cavities were seen in right second molar and left first and second molar teeth in the mandible. A periapical lucency was seen surrounding the root of the right lower second molar tooth with erosion of the lateral cortical margin of the mandible in this region, suggestive of a periapical abscess with bone destruction. Minimal focal soft tissue attenuation was seen adjacent to the eroded margin of the mandible with a linear soft tissue attenuation tract extending from the mandible through the subcutaneous soft tissues to the cutaneous nodule in the jaw region, suggestive of a dentocutaneous fistula.

Discussion:
A dentocutaneous sinus tract/fistula is a pathway that drains infected material from the periapical region of a tooth through alveolar bone onto the cutaneous surface of the face or neck [1, 2]. Dental caries leading to bacterial infection of tooth pulp with resultant periapical abscess formation is the commonest cause of dentocutaneous sinuses [3]. The abscess erodes cancellous bone and then ruptures through the periosteum. If the abscess ruptures above the level of the muscle attachment in the maxilla or below the level of muscle attachment in the mandible, an extraoral sinus tract extending to the cutaneous surface develops [2]. About 80% of dentocutaneous sinuses originate from the mandibular teeth [3]. The commonest sites of external drainage are thus in the region of the jaw and chin [2].
On examination the cutaneous lesion usually appears as a nodule with a central opening with suggestion of fixation to underlying structures. Pus discharge can be elicited by pressure on surrounding soft tissues. A panoramic or periapical radiograph is considered the ideal imaging investigation for a periapical abscess. The lucency surrounding
the root of the involved tooth is well depicted. Demonstration of this lucency coupled with a thorough clinical and intraoral examination by a dentist is usually sufficient to diagnose a dentocutaneous sinus/fistula. The cutaneous nodule may however mimic a number of other conditions including a pustule, furuncle, epidermal inclusion cyst, congenital fistula and malignancy [1, 2]. Patients with dentocutaneous sinus tracts also usually present to physicians and surgeons, rather than dentists [1]. These patients may thus be referred for cross sectional imaging as in our case. CT allows clear visualisation of the periapical lucency in the region of the periapical abscess and demonstrates the area of erosion involving the cortical margin of the bone. The soft tissue attenuation sinus tract extending from the periapical region to the cutaneous surface is also directly visualised on CT. Some studies suggest CT to be superior to radiographs in demonstrating periapical abscesses [3].

Dentocutaneous tracts do not heal completely with antibiotic therapy alone. A biopsy usually reveals non-specific findings and may actually exacerbate the condition [1]. Effective treatment of this condition involves root canal treatment or extraction of the affected tooth with or without antibiotic therapy [3]. Our patient underwent tooth extraction with oral antibiotic therapy. Post extraction the patient reported that the nodule had healed partially with complete cessation of pus discharge.

**Differential Diagnosis List:** Dentocutaneous fistula from a periapical abscess involving second molar tooth., Furuncle, Cheek malignancy, Epidermal inclusion cyst

**Final Diagnosis:** Dentocutaneous fistula from a periapical abscess involving second molar tooth.

**References:**


Description: Cavities are seen involving the right second molar tooth and left first and second molar teeth in the mandible. Origin: Ramnad MRI and CT Scans, Ramnad, India.
**Description:** A lucency is noted in the periapical region of the right lower second molar tooth. The lateral cortical margin of the mandible in the region of this lucency appears eroded (arrow). **Origin:** Ramnad MRI and CT Scans, Ramnad, India.
**Description:** Coronal reformatted image showing the periapical lucency in the region of the right second molar tooth with the erosion of the lateral cortical margin of mandible in this region (arrow).

**Origin:** Ramnad MRI and CT Scans, Ramnad, India.
Description: Focal soft tissue attenuation is seen adjacent to the mandible abutting its eroded lateral cortical margin. Origin: Ramnad MRI and CT Scans, Ramnad, India.
**Description:** A soft tissue attenuation tract (arrows) is seen extending from the lateral margin of the mandible through the subcutaneous soft tissues up to the cutaneous nodule in the region of the jaw.

**Origin:** Ramnad MRI and CT Scans, Ramnad, India.
Description: Coronal reformatted image showing the soft tissue attenuation tract (arrows) extending from the lateral margin of mandible up to the cutaneous nodule in the jaw region. Origin: Ramnad MRI and CT Scans, Ramnad, India.