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EC DENTAL SCIENCE
Case Report

# Tourettes Syndrome Synopsis

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Characterised by certain tics or abnormal muscle movements or twitches.

1. Various unusual tics often in the shoulders or abdomen.
2. Eye tics like chronic blinking or slow blinking.
3. Vocal sounds such as coughing, humming, barking or swearing.

### So, what is it about?

1. Starts before 18 years old.
2. The tics are not due to any substance or medical condition.
3. Tics occur multiple times a day.
4. Multiple motor and vocal tics present.

### Common signs

- Eye movement
- Facial grimacing
- Head jerking movement
- Shoulder shrugging
- Arm or hand movement
- Abdomen and pelvic movement
- Bending or gyrating complex movements
- Phonic tics (shouting, screaming, coughing, clucking, swearing and spitting).

### Comorbid conditions some patients may have

- They all have severe TMD
- They are nearly always over-closed with a deep bite
- The condyles are distalised
- They have an under developed maxilla
- Most have Miserable Malalignment Syndrome

### Put simply, the idea is that Tourette's Syndrome is caused by

- Compression of the Auricula Temporal Nerve by the Condyle
- Via the Trigeminal Nerve the effect goes through the Subnucleus Caudalis.
- Which affects the Reticular Formation, causing cross-firing interneuron connections, which then affect other Cranial Nerves.

### The other affected Nerves are

- The Facial Nerve (7) – Facial tics
- Glossopharyngeal Nerve (9) – Coughing
- Vagus Nerve (10) – Vocal Sounds
- Spinal Accessory Nerve (11) – Shoulder Shrugging

### Reasons for Tourette's TMD

- Cranial growth completed at age 5
- Boys maxilla by age 7
- Girls maxilla by age 9
- Mandible by age 9
- 3-5 times more common in males, possibly due to the maxillary cranial growth difference

## Case History

Patient: Henry

Age: 15 years' old

Referred to me for treatment of Tourette's Syndrome

### Symptoms

Spontaneous severe swearing and utterances, supraorbital headaches, continuous popping vocal sounds, seizures (had a fit five months previous), up to 150 tics or involuntary movements in an hour, eye tics (want to shut eyes Blepharospasm), head and neck stretching, head banging and punching himself in the head, reduced hearing by 20% and tinnitus in the right ear.

### History

Started five months previous after the seizure he had. He had glue ear as a child. Brain scan MRI was normal. Under care of Neurologist.

### Posture

Head tilt to the right and rotated to the left, left side bend, dropped right shoulder, dropped instep on the left foot, left knee toed out, pelvis up on the left by 1.5 centimetres, enlarged left Trapezius.

### Dental

Cross bite on the lower left, significant clicking in the right TMJ.

### Kinesiology

Approximately 3 times stronger in an edge to edge bite.

### TMJ Palpation

Clicking on the left TMJ.

### Jaw Vibrational Analysis

Right side mid opening and mid closing click.

### Electromyography

Left Temporalis constantly firing at rest. When clenching the left Temporalis was firing 3 times more than the right.

### Matscan

(Foot Scanner): Unstable stance with increased sway, unsteady gait, rotating to the left.

### T-Scan

(bite scan): Centre of force back and on right molars.

### Questionnaire Results

Pain and headaches increased with Blapharospasm and exercise. Sight recently deteriorated significantly over 6 months from long-sighted to severe short- sighted. Has seen 8 specialists for Tourette's. Patient hears voices in his head saying his name.

### TMJ X-Ray

Left Side- Condyle superior and posterior displaced. No joint space seen, condylar head flattening with beaking and condylar head bending. When open no joint space.

Right side- Condyle superior displaced and posterior displaced with some joint space.

### Orthotics

Patient was wearing orthotics but still the pelvis was up by 2 centimetres on the left. Head tilt to the right and shoulder dropped on the right. Referred to the Podiatrist for new orthotics to ensure pelvis is parallel to the floor.

### Symptoms

Patients main 5 symptoms are:

- Tourettes
- Headaches
- Tics
- Fatigue
- Hearing reduction

### Dental findings

Significantly microdontic upper cross bite with lower left laterals and canine, Class 1, Normal overbite and overjet, narrow airway and large tonsils.

### Muscle Test

All tender but especially the Medial and Lateral Pterygoid and the Sternocleidomastoid.

### Range of Motion

Maximum opening 44 mm, left excursion 5mm, right excursion 4mm. Deviation on opening.

### Cervical Range of Motion

Left side bending of head restricted.

### Cranial Rhythm

Very weak, stronger on the right than left and oscillating.

### MRI: Brain Scan

Nothing abnormal detected. TMJ MRI- Right side Wilkes Classification 4-5. Anterior non-reducing discs with condyle and eminence degeneration and synovitis. Left side Wilkes Classification 3-4. Anterio-medially dislocated disc with reduction on opening. Mild degenerative changes of the condyle and eminence.

### Orthodontic Diagnosis

Full photos, Later Skull and OPG, Bimler Tracing and Study Models. Skeletal Class 3, Div 2, open bite, Dental midline Class 2, Div 3. Neutral bite, tongue thrust, factor 1 is minus 5 degrees.

### Proposed Treatment

1. Upper R-N Sagittal to develop the arch.
2. Lower TMD Splint to reduce the TMD (Tourettes) and retract the lower incisors.
3. Fixed braces to level and align the teeth.
4. Veneers on upper 2's
5. Retainers

Estimated Treatment time: 3 Years.

### Treatment

**17/2/11** Fitted upper R-N Sagittal and lower TMD Splint. Maximum opening 44 mm.

**6/4/11** second visit. Patient accompanied by ITV Film Crew for the Documentary "My Child is not Perfect". Maximum opening 51mm. Patient reports coming off all medication. Tics have increased except eye ones, which have reduced. Applied Kinesiology tested strong in the splint at this height.

**4/5/11** Patient is much calmer since coming off the medication. Audiology noted hearing is back to normal (had been 20% down). Maximum opening 54 mm. Big changes in symptoms. Not one expletive and just minor tics left.

**29/6/11** Only little bursts of tics when patient is stressed. Maximum opening 56mm. Referred patient to Podiatrist.

**27/7/11** Fitted fixed Full upper braces and removed R-N Sagittal. Still wearing splint full time.

**24/8/11** Patient now seeing Cranial Osteopath. Orthotics being made to level Pelvis. Only one tic seen in the waiting room and one tic in the surgery.

**18/10/11** Neurologist has now expressed an interest in what we have been doing with patient. Checked and adjusted braces.

**15/11/11** No tics seen today. Reports some when stressed especially at college.

**15/2/12** Headaches nearly gone, still some tics. Continued orthodontic adjustments.

**6/3/12** Patient seeing Chiropractor in Henley for Sciatica. Tics nearly stopped.

**20/4/12** Tics only once a week. Can be linked with eating rich/sweet food. Patient can no whistle.

**8/5/12** Built up splint as some tics back. Continued orthodontics to widen and develop the upper arch.

**23/8/12** Upper arch finished in 019x025 Stainless Steel Wire.

**18/10/12** Started lower fixed on the anteriors. Some 2x4 Mechanics needed on the upper fixed to advance the premaxilla further forward as the mandible auto- translating to an edge to edge position.

**18/4/13** Started extrusion Mechanics to reduce the posterior open bite, pulling up lower canines first.

**16/5/13** Patient reports 100% improvement from the original Tourette's. Passed Driving test. No vocal, no more intrusive thoughts and no more OCD. Started extruding the lower 4's.

**5/7/13** Patient physically assaulted when riding on his bike, bruising and bleeding in mouth. Possible fractured right cheekbone.

**5/10/13** Splint finished with as extrusion mechanics completed. Patient all recovered from assault.

**6/8/14** All lower orthodontics finished and teeth and occlusion maximised with interarch elastics.

**13/9/14** Fitted retainers (Hawleys and Truitains) and bleaching trays. Final video taken.

**28/12/14** Final Orthodontic Check. Patient reports no signs or symptoms of Tourettes except very are tics.

To see Henry's final Video please go to www.openwide.biz (About us- Testimonials).

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