Symposium - Det slidte tandsæt - del 4

Vært
Tandlægeforeningen

Dato
03.11.2023

Forbehold
Alle forbehold for noternes korrekte gengivelse af kursusmaterialet tages af forfatteren.

Top 3 Dental Insights

1. Rehabilitering af det slidte tandsæt

I 2023 er kun 1/8 af de unge ældre patienter (65-74 år) tandløse, mens det i 1997 var 1/4.
Vi vil se mere og mere fysiologisk tandslid, fordi folk beholder deres tænder længere hele livet.

Alvorligt tandslid stiger fra 3% i 20-års alderen til 17% i 70-års alderen.

De fleste mennesker kommer til tandlægen på grund af æstetiske problemer.

Præmolarer med 2 udskiftede cuspides har 297% større sandsynlighed for at mislykkes end præmolarer med 1 udskiftede cuspides.

Symptomer, patienter med tandslid søger behandling for
59% æstetiske bekymringer
49% følsomhed
17% funktionelle problemer
14% smerter

Det er vigtigt at følge patienterne tæt. Hvis de ikke ændrer deres vaner, og hvis den grundlæggende årsag ikke behandles, vil problemerne dukke op igen efter nogle år.

Man er nødt til at finde årsagen til tandslid hos hver enkelt patient.

Kemisk (fx gastroøsofageal refluks)
Mekanisk (fx okklusal dysfunktion)
Kombineret kemisk og mekanisk (fx bulimi + bruksisme)

2. Behandling af patienter med tandslid

Patienterne tilpasser sig hurtigt til moderate nye okklusale vertikale dimensioner (OVD). De funktionelle og protetiske komplikationer efter forøgelsen af OVD er ikke hyppige og normalt ikke længere tydelige efter 2 uger.

Ved at forøge OVD skaber man en fladere guidance.
Ved at reducere OVD skaber man en stejlere guidance.

Okklusale diagnoser (af Dr. John Kois, Functional Occlusion Manual)
1. Acceptabel funktion - Ingen behandling nødvendig (grøn zone)
2. Constricted envelope of function - kan behandles (gul zone)
3. Okklusal dysfunktion - Kan kureres (gul zone)
4. Parafunktion - Kan kun behandles (rød zone)
5. Neurologiske lidelser - Kan kun behandles (rød zone)

8 konklusioner i behandlingen af det slidte tandsæt (af Dr. Stefano Gracis)
1. Forsøg altid at identificere årsagen/årsagerne til tandslid, før du påbegynder en behandling.
2. Hvis tabet af tandsubstans skyldes kemiske påvirkninger, skal man ud over at hjælpe patienten med at løse problemet (medicinsk eller adfærdsmæssigt) overveje at beskytte de resterende tandoverflader.
3. Det er ikke hos alle patienter, at tandslid forårsager tab af OVD (okklusale vertikale dimensioner).
4. Diagnosticering af tabet af OVD er et sekundært aspekt i forhold til behovet for at ændre det af restaureringsmæssige årsager.
5. Okklusal vertikal dimension er en parameter, der kan ændres, men med måde.
6. Den kliniske tilgang bør være baseret på anvendelse af provisoriske restaureringer for at teste den nye vertikale dimension og evaluering af patientens adaptive kapacitet gennem en grundig semiologisk analyse.
7. Hvis der ikke findes en effektiv anterior guide, bør det være et mål for den protetiske rehabilitering.
8. Sæt disse patienter på et strengt vedligeholdelsesprogram med passende intervaller.

5 konklusioner i behandlingen af det slidte tandsæt (af Dr. Daniel Edelhoff)
1. Monolitisk keramisk restaurering kræver præcis overførsel af okklusion.
2. "Testkørsler" med polymerer til finjustering af funktion/æstetik.
3. Materiale-slitage: komposit -> hybridkeramik -> glaskeramik -> zirkonia.
4. Undgå overbelastning af implantater med passende suprastruktur.
5. Materialevalg/kombination skræddersyet til den individuelle kliniske situation.

3. Aftagelig eller bonded polymerskinne til rehabilitering

Direkte teknikker er gode, når:
- Minimalt invasive teknikker, især hos unge patienter og højrisikopatienter
- Lavprisbehandlinger er den eneste mulighed
- Tandlægen skal være dygtig

Indirekte teknikker er gode, når:
- Ved store rehabiliteringer bedre styring af okklusion og vertikal dimension
- Når der kræves optimal form og æstetik i forbindelse med keramiske materialer
- Højere omkostninger

Slidindikation aftagelig skinne
Aftagelig tandfarvet snap-on-skinne (Munich-skinne af PMMA) kan indikere slidfacetter hos patienten i 3-12 måneder.

Fordele ved en aftagelig skinne:
- Øger patientens accept
- Genetablerer okklusalplan og tandmorfologi
- Æstetisk og fonetisk evaluering
- Kortere tilvænningsperiode
- 23 timers funktion (1 time til rengøring og spisning), hvilket giver en højere effektivitet og dermed en "reset"-mulighed

Slidindikation bonded skinne
En bonded skinne er også en mulighed i op til 2-3 år, og derefter kan der laves en endelig restaurering.

Fordele ved en bonded skinne:
- Høj patientaccept
- Næsten perfekt tandmorfologi og overbelastning af en enkelt tand
- Mulighed for æstetisk og fonetisk langtidsevaluering
- Kortere tilpasningsperiode, 1:1-situation ved voksning
- 24 timers funktion, som er en permanent terapi og dermed meget effektiv

Dét var Top 3 Dental Insights.

Få resten af noterne lige herunder.

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Treatment concepts and strategies for the rehabilitation of the worn dentition

V/ Daniel Edelhoff, professor, dr med dent
Stefano Gracis, dr, dentalbrera.com

Stefano Gracis, dr

Books “Tooth Wear” - Didier Dietschi

Book: “Tooth Wear — The Quintessential Challenge”

Chemical (fx gastro-oesophageal reflux)
Mechanical (fx occlusal dysfunction)
Combined chemical and mechanical (fx bulimia + bruxism)

It’s important to monitor the patients closely. If they don’t change their habits, and if the root cause is not treated, the problems will reappear after a few years.

Questionnaries for the patient
Medical history form
Dental history form

Dental history form by Dr. John Kois

You have to find the cause of tooth wear in each of the patients.

Occlusal diagnosis by Dr. John Kois, Functional Occlusion Manual:
1. Acceptable function — No treatment necessary (green zone)
2. Constricted envelope — Curable (yellow zone)
3. Occlusal dysfunction — Curable (yellow zone)
4. Parafunction — Can only be managed (red zone)
5. Neurologic disorders — Can only be managed (red zone)

Diagnosing parafunction:
- Accurate clinical history
- Accurate semeiological examination (muscle palpation, clinical signs and symptoms, mandibular position and movement, joint condition, shape and extension of wear facets)
- Evaluation of bite appliances, if present (‘read’ the patient’s previous oral appliances)

Attrition / abrasion (mechanical): flat, shiny, well defined margins that match the antagonist teeth.
Erosion (chemical): cup shaped, surface not glossy, satin finish and rounded edges.

OVD = occlusal vertical dimensions

The vertical dimension:
- Normal dentate
- Compensatory alveolar eruption (OVD is maintained)
- No compensatory alveolar eruption (OVD is decreased)

How to determine occlusal vertical dimensions (OVD):
Good, but uncertain ways:
- Normal freeway space = 3 mm, but this can differ according to airway space etc.
- Observe the closest speaking space — “S” sound (patient counts from 60-69).
- Arbitrary visual inspection.

Patients adapt quickly to moderate new OVD.

There is no evidence in the literature that the OVD cannot be altered or that variations in OVD cause damage.

The functional and prosthetic complications after the OVD increase are not frequent and usually no longer evident after 2 weeks.

Wear of the dentition does not necessarily indicate a loss of OVD.

It might necessary to alter OVD, if you need more vertical space for the restorations, or if you want to modify and overjet over overbite.

Centric Relation (CR)

By opening OVD you create a flatter guidance.
By closing OVD you create a steeper guidance.

A flatter guidance:
- Decreased loading of anterior teeth
- More favorable muscle response
- More horizontal chewing (and, thus, potential for more attrition?)
- Less posterior disclusion
- Higher risk of posterior interferences
- Flatter posterior anatomy

A steeper guidance:
- More posterior disclusion
- Less risk of posterior intereferences
- Steeper posterior anatomy
- More vertical chewing (and, thus, potentiel for less attrition?)
- Unfavorable muscle response?
- Increased loading of anterior teeth

Patients with constricted envelope of function have many clinical signs and symptoms (from John Kois):
- Tender joints
- Tired muscles when speaking a lot
- Typical wear pattern: lingual maxillary teeth and buccal mandibular teeth
- Absence of significant wear on posterior teeth (depends on timing of problem)
- Mobility of anterior teeth
- No mobility of posterior teeth
- Open spaces among anterior teeth
- Fast chewing (fewer cycles)
- Anterior initial contact after deprogramming

Book by Dr. Calamita

Conclusions
1. Always attempt to identify the cause(s) of tooth wear before starting any treament.
2. If the tooth sbstance loss is due to chemical action, besides helping the patient adress the issue (medically or behaviorally), consider protecting the remaining tooth surfaces.
3. Not in all patients tooth wear causes loss of OVD (occlusal vertical dimensions).
4. Diagnosing the loss of OVD is a secondary aspect to the need to alter it for restorative reasons.
5. Occlusal vertical dimension is a parameter that can be modified, but with moderation.
6. The clinical approach should be mediated by the application of provisional restorations to test the new vertical dimension and the evaluation of the patient's adaptive capacity through a thorough semeiological analysis.
7. When absent, obtaining an efficient anterior guide should be an aim of the prosthetic rehabilitative therapy.
8. Place these patients on a strict maintenance program with adequate intervals.

Daniel Edelhoff, professor, dr med dent

DMS V Study:
In 2023 only 1/8 young senior patients (65-74 years old) are endentolous, while in 1997 is was 1/4. We will see more and more physiological tooth wear, because people are keeping their teeth longer throughout life.

Severe tooth wear inceases from 3% at age 20 years to 17% at age 70 years.

Natural interincisal relationship: posterior teeth protect anterior teeth.

Most people come to the dentist because of esthetic problems.

Premolars with 2 cusps replaced have 297% more chance of failure than premolars with 1 cusp replaced.

Direct techniques are great when:
- Minimally invasive techniques especially in young patients and high risk patients
- Low cost treatments as only option
- Dentist should be skilled

Indirect techniques are great when:
- In large rehabilitations better management of occlusion and vertical dimension
- When optimal form and esthetics is required associated with ceramic materials
- Higher costs

Good combination treatment in the same patient:
LS2 monolithic ceramics
Sintered veneers
Direct composite

Gold alloy (type III gold) has better wear resistance and lower friction coefficient than lithium disilicate glass ceramic. Gold alloy will show the same wear rate as teeth.

Zirconia (monolithic ceramics) show no material loss. The occlusion has to be perfect, otherwise the antagonist teeth will be worn.

Wear indication removable splint
Removable tooth colored snap-on splint (Munich splint of PMMA) can indicate wear facets in the patient for 3-12 months.

Benefits of a removable splint:
- Increase patient acceptance
- Reestablish occlusal plane and tooth morphology
- Esthetic and phonetic evaluation
- Shorter period of adaption
- 23h function (1h for cleaning and eating), which gives a higher efficiency and thereby a “reset” option

Wear indication bonded splint
A bonded splint is also an option for up to 2-3 years, and then a final restoration can be made.

Benefits of a bonded splint:
- High patient acceptance
- Almost perfect tooth morphoogy and single tooth overload

- Option of esthetic and phonetic long-term evaluation
- Shorter period of adaptation, 1:1 situation of waxup
- 24h function, which is a permanent therapy and thereby is highly effective

Symptoms of why tooth wear patients seek treatment
59% esthetic concerns
49% sensitivity
17% functional problems
14% pain

Anterior teeth protect posterior teeth in dynamic occlusion.
Posterior teeth protect anterior teeth in static occlusion.

The glaze of ceramics will disappear in the contact areas after a few years, so we don't need glaze in the contact areas, just polish.

Composites will wear over time in bruxism patients, and therefore ceramics can be better in the posterior region.

Night splints should be used by restored bruxism patient the same way a car is parked in the garage for protection.

Complex cases treatment
Examination
Preliminary impression (CR/MI)
Photographs, Facebow
Analysis of esthetics and function
—>
Esthetic evaluation "mock up"

Positional splints (PMMA)
Tooth-colored splints (polycarbonate)
Bonded splints veneers (PMMA)
—> Functional evaluation "test-drive"

Selection of definitive material
Segmental tooth preparation
Bite transfer by separated splints
—> Tranfer into definitive restoration

Conclusions
- Monolithic ceramic restoration need precise transfer of occlusion
- "Test drives" with polymers for fine adjustment of function/esthetics
- Material wear: composite —> hybrid ceramic —> glass ceramic —> zirconia
- Avoid overload of implants by suitable superstructure
- Material selection/combination tailored to individual clinical situation

Dét var Dental Insights. Tak fordi du er her. ❤️

Kærlig tandhilsen Anne Mette