

5 Ways DentalMonitoring Greatly Enhances My Orthodontic Treatment Process

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As orthodontists, our goal is to provide efficient, effective care that not only meets the needs of our patients but also adapts to their individual progress. In my practice, DentalMonitoring (DM) has revolutionized the way we manage and track orthodontic treatments. By leveraging its AI-powered capabilities, I've been able to enhance treatment outcomes, increase patient satisfaction, and minimize in-office visits. Here are five key ways DM has allowed me to improve the quality and efficiency of my orthodontic cases.

1. DM Insights: Making data-driven clinical changes

DM Insights transforms data collected from DM scans into easily interpretable metrics. This valuable information enables me to identify discrepancies and make informed adjustments to both treatment plans and clinical workflows, ultimately enhancing my clinical control. The following two scenarios illustrate how I leveraged these insights to optimize patient treatments.

Aligners Unseats

The data from August 2023 to March 2024 revealed a high incidence of noticeable aligner unseats, particularly on the upper laterals (Figure 1). In response, I made strategic changes to the treatment plan: I switched the attachments on the laterals from beveled attachments which were small in size to rectangular horizontal or vertical shapes. I closely monitored the impact over the subsequent year (Figure 2). These changes yielded significant improvements: the unseat rate on the upper laterals dropped from 11% to 2%, and the overall unseat rate declined from 18.1% in January 2024 to 6.7% in February 2025, well below the global average of 17.9%. Some real-life examples are illustrated in Figures 3 and 4.

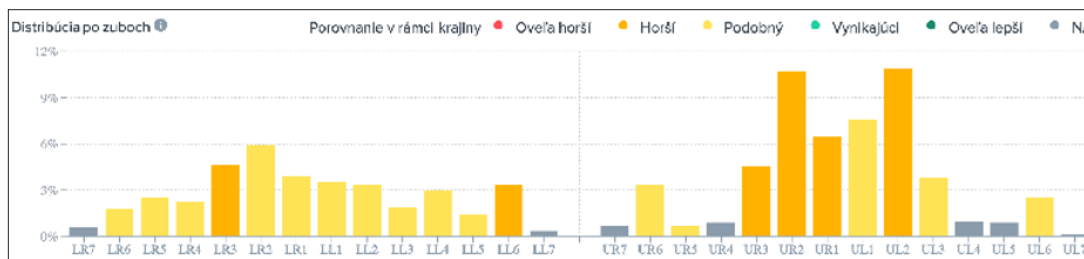


Figure 1 - DM Insights data illustrating aligner unseats per tooth from August 2023 to March 2024



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In addition to her clinical work, Dr. Ivančová is actively involved in academia as a university lecturer at the Department of Dentistry and Maxillofacial Surgery of UNLP and the Faculty of Dentistry at UPJŠ in Košice.

She has also completed advanced certification courses in Invisalign, specializing in the treatment of maxillofacial anomalies using clear aligners.

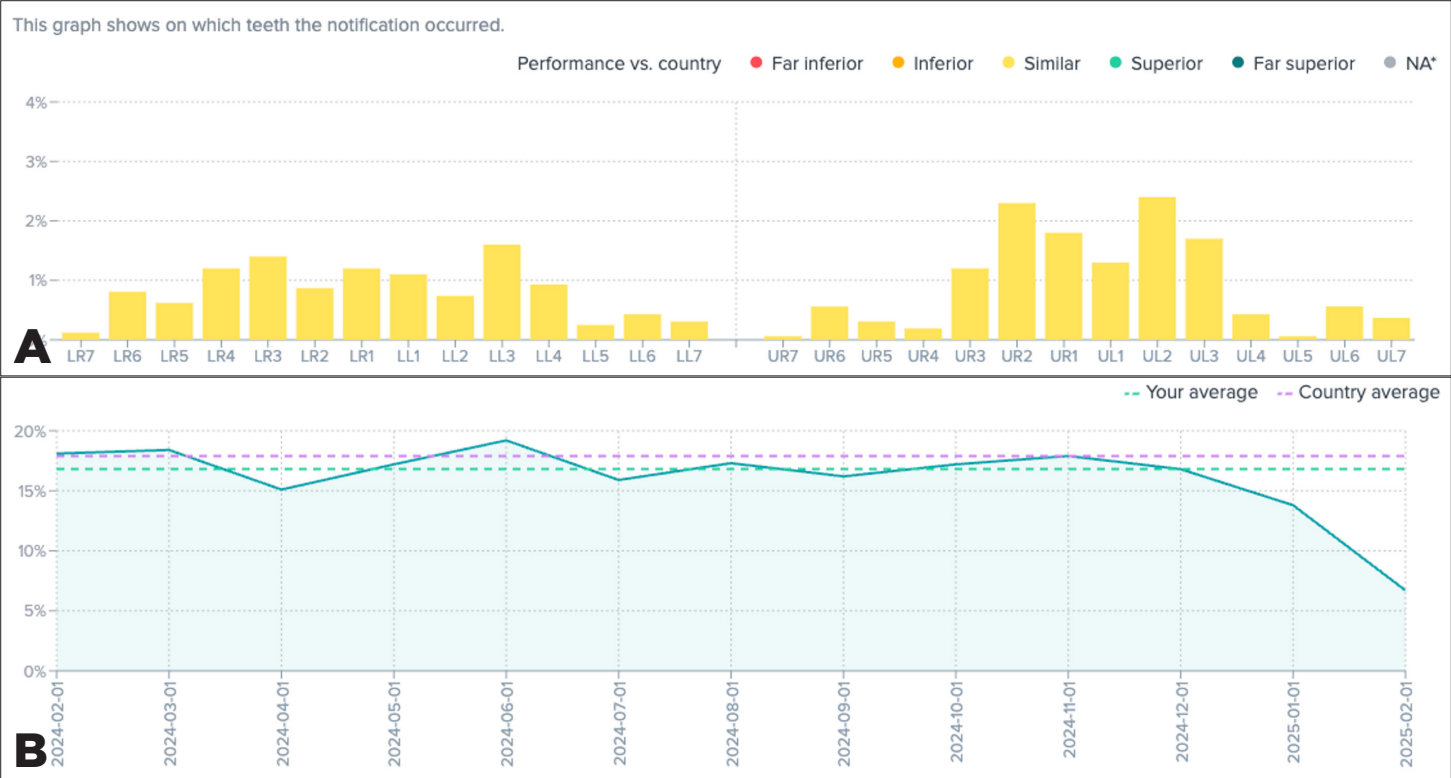


Figure 2A - Rate of aligner unseats per tooth in February 2025.
Figure 2B - Rate of aligner unseats evolution over time from February 2024 to February 2025.



Figure 3 - DM scan showing aligner fit issue on the upper right lateral with the beveled attachment



Figure 4 - DM scans showing a satisfactory aligner fit on the upper laterals with horizontal and vertical attachments

1. DM Insights: Making data-driven clinical changes (continued)

Hygiene

The data from August 2023 to March 2024 highlighted a high overall prevalence of plaque detected by DM, with a relatively consistent distribution across teeth (Figure 5.A). However, plaque was more prevalent in the early stages of treatment (Figure 5.B). In response, I enhanced dental hygiene education and coaching for patients from the outset and scheduled more frequent hygiene visits for those with lower compliance. After implementing these changes, I tracked the impact over the following year (Figure 6). The data demonstrated a significant reduction in overall plaque prevalence, highlighting the effectiveness of the adjusted approach. A real-life example of improved hygiene is illustrated in Figure 7.

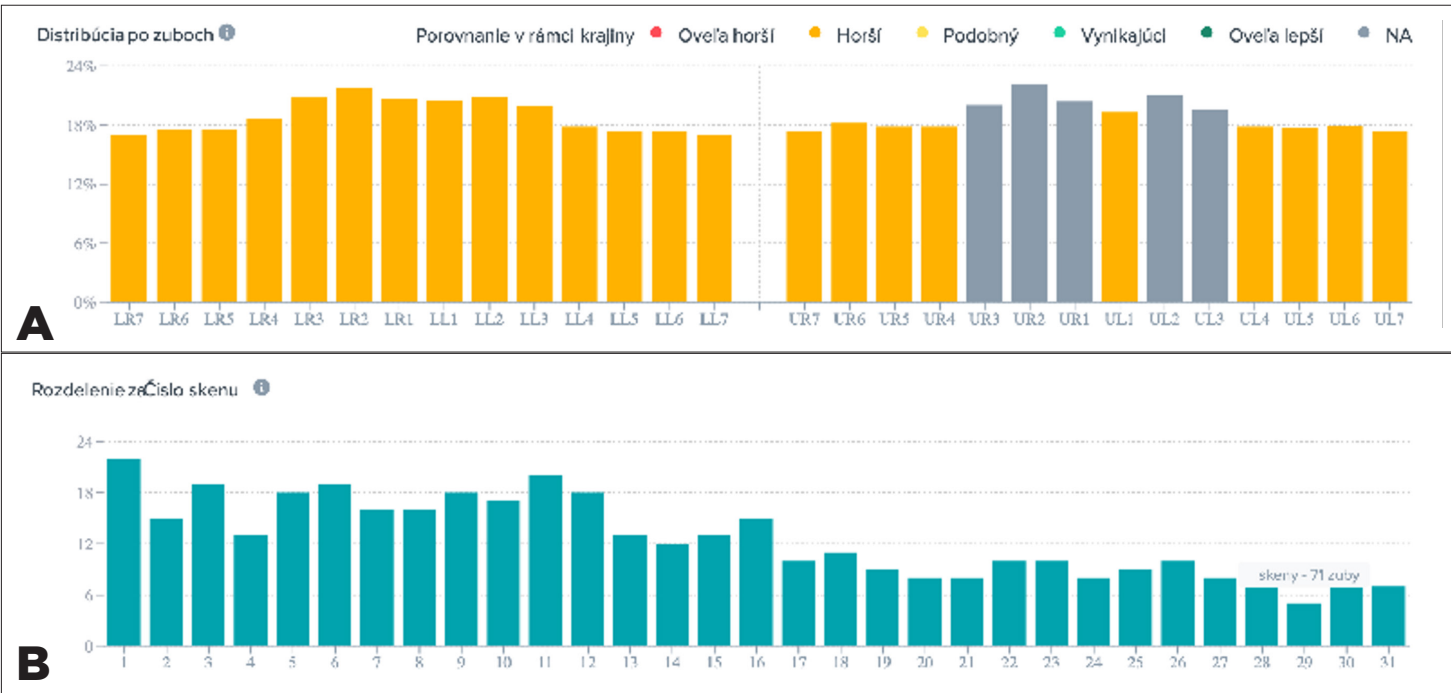


Figure 5A - Prevalence of plaque per tooth.
Figure 5B - Prevalence of plaque per aligner tray.

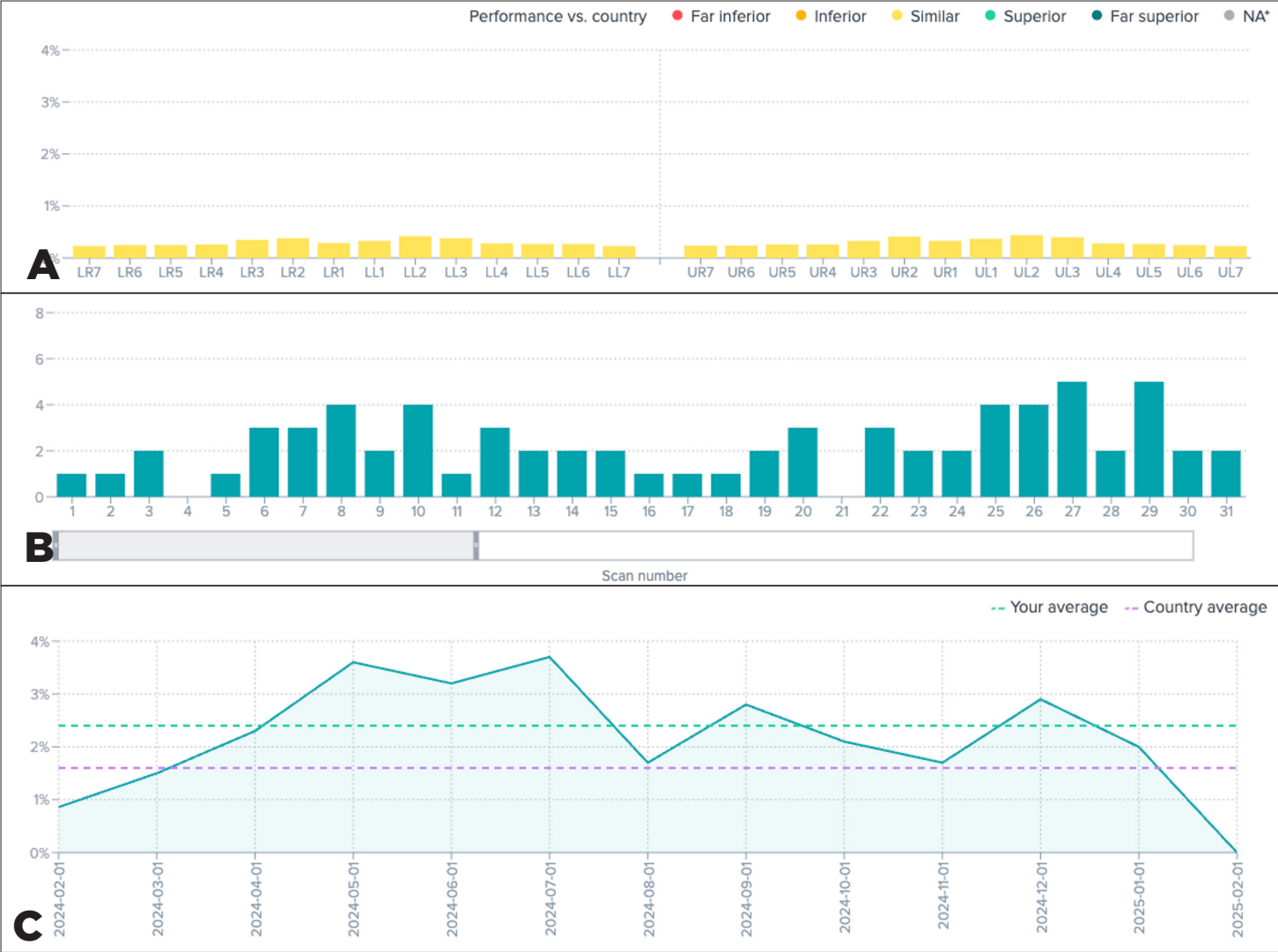


Figure 6A - Prevalence of plaque per tooth.
Figure 6B - per aligner tray.
Figure 6C - Evolution from February 2024 to February 2025



Figure 7 - An example of hygiene improvement shown on two DM scans taken at two different time points.

2. Monitoring the treatment progress in real time and making timely changes when necessary

Scenario 1 - Reciprocal movements

When a case requires reciprocal movements, regular monitoring is essential to detect early signs of aligner fitting issues that may indicate movement failure. The case below highlights how poor planning and ineffective reciprocal movements resulted in a significant aligner misfit on the four upper incisors (Figure 8). By looking at the treatment plan I could see that with distalization movements I was also doing lingual (or palatal) crown torque of the incisors (Figure 9). This was a mistake, as with distalization movements we have to do buccal crown torque of the incisors. Following this insight, I modified the protocol and monitored the progress. Figure 10 shows the significant improvements that followed.



Figure 8 - DM scan showing noticeable aligner unseat on the upper incisors on tray number 28

TOOTH MOVEMENT TABLE						
< Abbreviations		Arch Maxillary				
< Thresholds		Measurements Crown				
17	0,7 O	3,3 D	2,7 L	19,4 O	8,3 L	8,0 M
16	0,3 O	2,7 D	1,1 L	20,1 O	1,0 L	4,2 M
15	0,1 G	1,4 D	0,4 B	3,4 O	1,5 B	2,9 M
14	0,1 O	0,6 D	0,1 B	0,6 I	4,0 B	0,2 D
13	0,7 G	0,7 D	1,0 B	0,0	8,4 B	0,7 D
12	1,0 G	0,6 D	0,6 B	2,1 O	0,1 L	3,6 D
11	1,1 G	0,4 D	0,5 B	6,8 O	5,6 L	3,4 D
21	1,0 G	0,0	0,3 B	5,3 O	12,3 L	3,1 D
22	1,1 G	0,1 D	1,0 B	3,0 I	1,9 L	2,3 D
23	0,4 G	0,2 D	0,9 B	0,8 O	0,4 B	1,5 D
24	0,0	0,5 D	0,3 L	0,9 I	2,1 B	1,6 D
25	0,4 G	1,2 D	0,7 L	4,5 O	1,7 B	1,8 D
26	1,0 G	2,6 D	3,0 L	25,8 O	3,2 L	1,9 D
27	0,4 G	3,0 D	4,4 L	20,7 O	14,4 L	5,0 M

Figure 9 - Treatment plan at stage 28



Figure 10 - DM scan of the same patient after modifying the protocol showing a satisfactory aligner fit on the upper incisors

2. Monitoring the treatment progress in real time ... (continued)

Scenario 2 - Catching adverse effects early on

This case highlights gingival recession on the upper right lateral and canine due to expansion movement. Correction and close monitoring are essential to address the issue and prevent further complications.



Figure 11 - Two DM scans at two time points showing the appearance of gingival recession on UR2 and UR3

Scenario 3 - Preventing adverse effects

In this case, performing a tipping movement on the lower incisors posed a risk due to their protruded position, as shown in the cephalogram (Figure 13). Considering this, I prioritized proper torque control and leveraged DM to monitor for gingival recession while ensuring effective tooth movements (Figure 14).



Figure 12 - Pretreatment intraoral photographs



Figure 13 - Pretreatment cephalogram



Figure 14 - DM scans at the beginning of the treatment (left) and during (right)

3. Tracking mixed detention

DM notifies me when deciduous teeth have fallen and permanent teeth start to erupt, allowing me to avoid unnecessary in-office visits while ensuring timely monitoring of the eruption process.

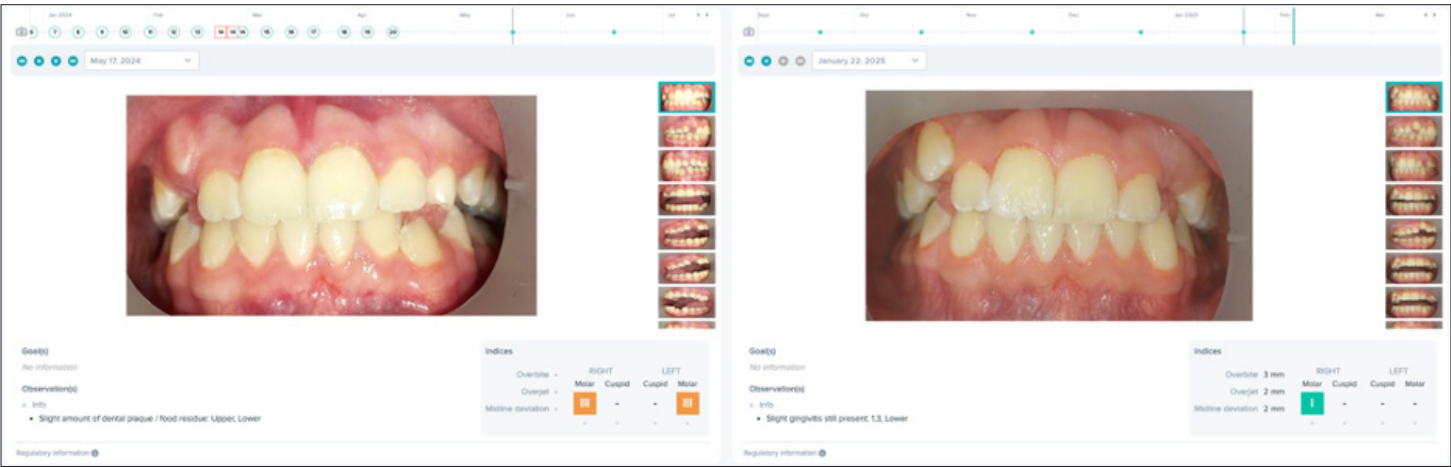


Figure 15 - DM scans showing the evolution of the eruption of the permanent upper right canine

4. Retention monitoring

Post-treatment relapse is a significant concern in orthodontics. During the retention phase, my patients scan every two months, and DM notifies me if tooth movement requires an in-office visit. This approach minimizes unnecessary appointments, keeps patients compliant, and allows for prompt intervention at the first signs of relapse.



Figure 16 - Retention monitoring scans

5. Detecting oral pathologies

DM's AI enables a holistic approach to monitoring. In addition to identifying treatment progress and appliance-related issues, it also detects oral health concerns, as shown in the cases below. This is crucial for me as an orthodontist since early signs of many systemic diseases often manifest in the oral cavity.



Figure 17 - DM scan showing signs of dental plaque, enamel hypomineralisation, and white lesions on the mucosa and the attached gingiva

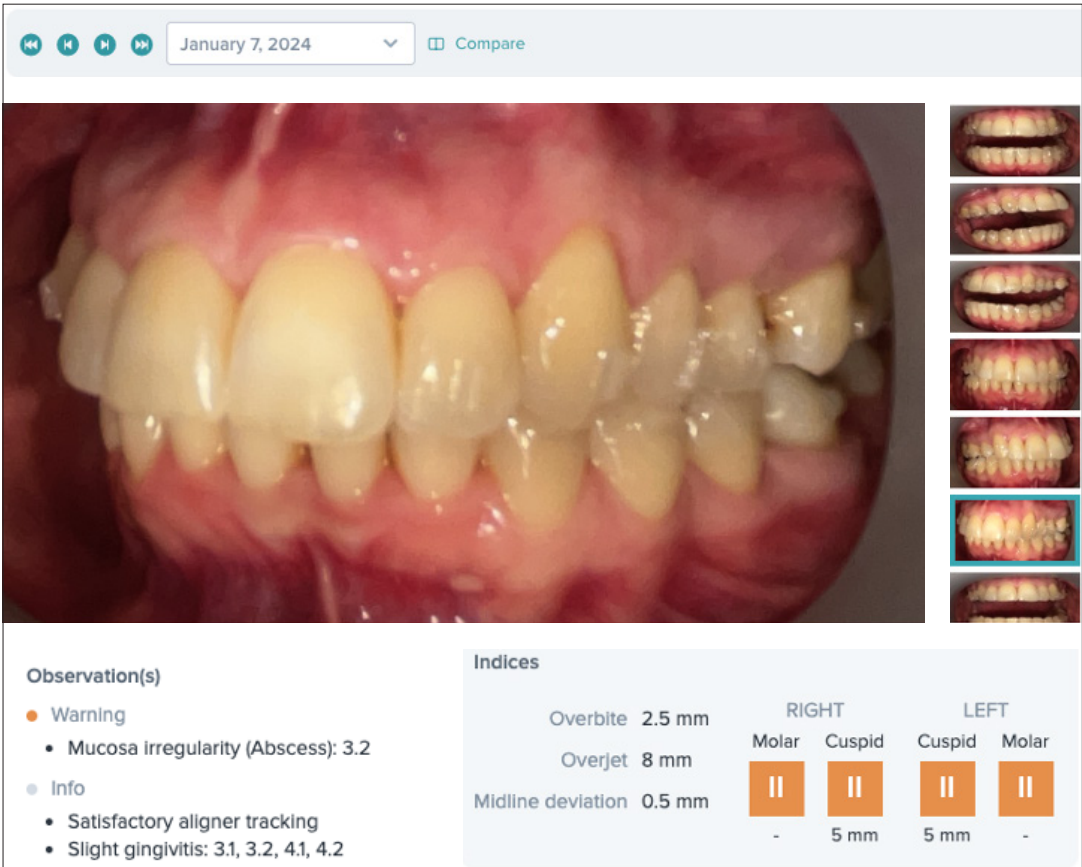


Figure 18 - DM detection of a mucosa irregularity (minor aphthous ulcer) on the lower left lateral

Conclusion

Incorporating DM into my practice has significantly transformed how I approach treatment. By providing real-time, remote monitoring and early detection of issues, it has enabled me to make informed decisions, reduce unnecessary visits, and deliver more personalized care. With DM, orthodontics becomes not just about achieving results, but ensuring that those results are attained with greater precision, efficiency, and patient satisfaction.



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