

INTISARI

Asimetri wajah merupakan salah satu permasalahan yang sering ditemukan pada kasus bidang oklusal yang miring, pergeseran garis tengah gigi ataupun maloklusi lainnya. *Cross bite posterior unilateral* merupakan salah satu maloklusi yang berhubungan dengan defisiensi aktivitas otot pengunyahan. Penelitian ini bertujuan untuk mengetahui pengaruh *cross bite posterior unilateral* terhadap aktivitas otot masseter superfisialis dan temporalis anterior serta kesimetrisan wajah kasus *cross bite posterior unilateral*.

Penelitian menggunakan subjek sebanyak 22 individu dengan rentang usia 17-31 tahun yang memenuhi kriteria inklusi dan eksklusi. Subjek penelitian merupakan individu dengan *cross bite* posterior unilateral yang tiap sisi dilakukan pengukuran aktivitas otot (otot masseter superfisialis dan otot temporal anterior) serta dilakukan pengukuran kesimetrisan wajah horizontal dan vertikal gonion. Pengukuran aktivitas otot menggunakan metode elektromiografi (EMG) dengan elektroda permukaan. Pemeriksaan kesimetrisan wajah dilakukan dengan pemeriksaan fotografi dari arah depan subjek pada jarak 1,5 m dengan kamera telepon seluler perbesaran 2x, ISO 200, F1.8, kecepatan *shutter* 1/50s dibantu pencahayaan arah lateral dari *soft box* kiri dan kanan. Data indeks asimetri aktivitas otot dan indeks asimetri wajah dianalisis menggunakan uji *T-test* dan uji korelasi *Pearson* dengan tingkat kepercayaan 95% ($p < 0.05$).

Hasil penelitian menunjukkan aktivitas otot masseter superfisialis dan temporalis anterior sisi *cross bite* lebih rendah dibandingkan sisi non *cross bite*, jarak wajah horizontal gonion sisi *cross bite* lebih rendah dibandingkan sisi non *cross bite*, jarak wajah vertikal gonion pada sisi *cross bite* sama dengan sisi non *cross bite* serta terdapat hubungan positif dan cukup kuat ($r = 0,494$) antara aktivitas otot temporalis anterior terhadap kesimetrisan wajah horizontal gonion serta terdapat hubungan positif dan kuat ($r = 0,601$) antara aktivitas otot temporalis anterior terhadap kesimetrisan wajah vertikal gonion, tidak terdapat hubungan antara aktivitas otot masseter superfisialis terhadap kesimetrisan wajah baik horizontal maupun vertikal gonion.

Kata Kunci : *Cross bite posterior unilateral*; aktivitas otot masseter; aktivitas otot temporalis anterior; asimetri wajah; elektromiografi

ABSTRACT

Facial asymmetry is a problem that is often found in canting of occlusal planes, shifting of the midline or other malocclusions. Unilateral posterior cross bite is one of the malocclusions associated with deficiency of masticatory muscle activity. This study aims to determine the relationship between the activity of the superficial masseter muscle and anterior temporalis muscle on facial symmetry in cases of unilateral posterior cross bite.

This study used 22 subjects with an age range of 17-31 years who met the inclusion and exclusion criteria. The crossbite and non-crossbite unilateral subjects were studied, and the activity of the superficial masseter and anterior temporal muscles was measured using the electromyography (EMG) method with surface electrodes. Facial symmetry examination is carried out by analyzing photos taken from the front of the subject at a distance of 1.5 m with a mobile phone camera with 2x magnification, ISO 200, F1.8, shutter speed 1/50s assisted by lateral lighting from the left and right soft boxes. Muscle activity asymmetry index and facial asymmetry index data were analyzed using a T-test and a Pearson correlation test with a 95% confidence level ($p < 0.05$).

The results showed that the activity of the superficial masseter and anterior temporalis muscles on the cross bite side was lower than on the non-cross bite side, the horizontal face length of the gonion on the cross bite side is lower than on the non-crossbite side, on the cross-bite side, the vertical facial length of the gonion is the same as on the non-cross-bite side, and there is a positive and quite strong correlation ($r = 0.494$). There is a positive and strong relationship ($r = 0.601$) between anterior temporalis muscle activity and horizontal gonion facial symmetry. There is no relationship between the activity of the anterior temporalis muscle and the vertical facial symmetry of the gonion, but there is a relationship between the activity of the superficial masseter muscle and both the horizontal and vertical gonions' facial symmetry.

Keywords: Unilateral posterior cross bite; masseter muscle activity; anterior temporalis muscle activity; facial asymmetry; electromyography