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Medical Uses and Risk Factors of Orthognathic Surgery

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Perspective

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DESCRIPTION

Orthognathic surgery also known as corrective jaw surgery or simply jaw surgery, is surgery intended to treat conditions of the jaw and lower face related to structure, growth, airway issues such as sleep apnea, Temporomandibular Disorders (TMJ), malocclusion problems mostly resulting from skeletal disharmonies, and other orthodontic dental bite problems that cannot be easily treated with braces, as well as the wide range of facial imbalances, disharmonies, and asymmetries. Orthognathic surgery has its roots in oral surgery, specifically in the fundamental procedures involving the surgical removal of impacted or misplaced teeth, as recommended by orthodontics to supplement dental therapies for malocclusion and dental crowding. Dr. Simon P. Hullihen's orthognathic surgery case from 1849 was among the first to be published.

The term was first used by Harold Hargis, but Hugo Obwegeser, who created the Bilateral Sagittal Split Osteotomy (BSSO), popularized it more widely, first in Germany. Congenital disorders like cleft palate are also treated with this procedure. The jaw bone is typically cut, moved, changed, and straightened during surgery to correct malocclusion or dentofacial malformation. The term "osteotomy" refers to the surgically performed division of bone.

An oral and maxillofacial surgeon can (generally) surgically realign a dental arch, or a segment of a dental arch with its accompanying jawbone, in relation to other segments of the dental arches by performing a "jaw osteotomy" on either the upper jaw or lower jaw (and typically both). The synchronization of dental arches has mostly been focused on producing a functional occlusion under the guidance of orthodontists. As a result, orthognathic surgery is viewed as a secondary procedure supporting a more fundamental orthodontic goal. Orthognathic surgery has only recently become a primary treatment for obstructive sleep apnea, especially with the evolution of oral and maxillofacial surgery in establishing itself as a primary medical specialty, as opposed to its long-standing status as a dental specialty.The primary use of surgery to correct jaw disproportion or malocclusion is rare in most countries due to private health insurance and public hospital funding and health access issues. A small number of mostly heavily socialist funded countries report that jaw correction procedures occur in some form or other in about 5% of a general population it would be at the extreme end of service presenting with dentofacial deformities like maxillary prognathisms, mandibular prognathisms, difficulty chewing, difficulty swallowing, temporomandibular joint dysfunction pains, excessive tooth wear, and receding chins.

An estimated 5% of people in the US or the UK have dentofacial anomalies that cannot be treated with orthodontics and require orthognathic surgery at last. Orthognathic surgery can be used to treat gross jaw discrepancies (anteroposterior, vertical, or transverse discrepancies), skeletal discrepancies associated to sleep apnea, airway problems, soft tissue discrepancies, and skeletal discrepancies linked to temporomandibular joint disorders. Complications include bleeding, edoema, infection, nausea, and vomiting are possible but rare. Following orthognathic surgery, infection rates of up to 7% have been seen; antibiotic prophylaxis lowers the risk of surgical site infections when the antibiotics are administered both during surgery and for more than a day afterward. Nerve injury can also cause some post-operative face numbness. The following neurophysiological tests can be used to diagnose nerve damage: Brush-Stroke Directional Discrimination (BSD), Touch Detection Threshold (TD), Warm/Cold (W/C) and Sharp/Blunt Discrimination (S/B), as well as Cold Detection Threshold (CDT) and Warm Detection Thresholds (WDT). In order to prevent nerve damage, the inferior alveolar nerve, a branch of the mandibular nerve, must be carefully identified during surgery and avoided. The numbness could be momentary or, less frequently, persistent. After restoration, recovery from the nerve injury normally takes three months.