

news THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS

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DALLAS--A faster, simpler technique for correcting severe facial and dental deformities is the goal of research to be carried out by University of Texas oral surgeons here under a just-awarded \$228,966 grant.

Chief investigator for the five-year project to be funded by the National Institute of Dental Research is Dr. William H. Bell, associate professor of oral surgery at The UT Health Science Center at Dallas. Dr. Bruce N. Epker, assistant professor, is co-investigator.

Physically and psychologically damaging disfigurements such as protruding teeth and the "dish-faced" appearance often associated with cleft palate, open bite (in which the teeth do not meet), over bite and bite might become correctable under local anesthesia without hospitalization as result of the studies, Dr. Bell says.

A key element in the research, to be conducted with rhesus monkeys, will be the testing of a still-unproven concept that selective cuts across facial bony structures will make those structures more pliant and thus less resistant to rapid movement under pressure.

"If we can determine the areas in the upper and lower jaw that resist movement and can cut them surgically and release pressure on the bone structure, this will facilitate rapid movement," Dr. Bell explained.

Experimental procedures will then establish whether pressure can be applied by advanced orthodontic appliances similar to teeth braces--possibly attached to a headgear the patient could wear--to facilitate much more rapid repositioning of the deformed jaw.

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Surgical procedures developed in recent years can accomplish dramatic improvement in facial appearance and functionality, Dr. Bell points out. It has become possible to surgically move four or five segments of the upper jaw in different directions to "unscramble the deformity."

But these procedures are limited by their complexity and cost. They are temporarily incapacitating and require hospitalization.

"Our research will determine if it can be possible to accomplish virtually the same results on an outpatient basis," he said. The procedure he hopes to develop would be "of less magnitude than removal of impacted wisdom teeth."

The UT experiments also will seek to clarify surgical steps necessary to keep segments of both hard (cortical) and spongy (cancellous) bone structure viable during corrective surgery.

One effort will test whether a surgical cut through the hard bone around the teeth, in concert with an orthodontic appliance to apply pressure, would speed up tooth repositioning that under ordinary techniques might require lengthy treatment.

"Theoretically, perhaps one could move the individual teeth or groups of teeth bodily and more rapidly than is possible under conventional orthodontics," Dr. Bell commented.

Earlier animal research appears to establish the validity of these concepts, but "a lot more needs to be done"--including steps to maintain blood flow to soft tissue supporting the bone-tooth segments being moved, Dr. Bell said.

The studies will be supported by a collaborating orthodontist from Dallas' Baylor College of Dentistry and by UT Health Science Center bio-engineers who will assist in designing and building new supportive appliances for applying pressure to move bone.

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If the results prove out as hoped, the five-year experimentation could yield what Dr. Bell describes as "a new dimension" in dental-facial rebuilding techniques.

"We could offer treatment to many more patients that is more rapid, more stable and predictable and which will produce results not produceable with present therapy," he said.

The problem of "malocclusion" or dental-facial deformity is widespread and diverse, Dr. Bell points out.

"It has been estimated that about 74 per cent of the population of our country has some type of major malocclusion," he said. Of these, about 50 per cent should and could benefit from some type of orthodontic treatment.

Typical malocclusions--observable in any crowd--include protruding and retruding teeth, severe over bites, open bites, protruding and receding jaws, persons with little or no chins, crowded teeth and widely spaced teeth.

Only a relative few receive needed orthodontic treatment in adolescence, the optimal time, he said. "The result is that many of these people go into adulthood with very severe dental-facial deformities."

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