Special Lecture


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Key Words: Oral radiology, China, Review, Imaging

Introduction
Since 1949, oral radiology has developed greatly from its uses in dental radiology to those in oral and maxillofacial radiology, and it is now entering the era of imaging diagnosis in China. Based on a review of hundreds of papers published in major Chinese journals concerned with oral radiology and based on our knowledge of the development of oral radiology in China, a review of oral radiology in China for the past 50 years (1949–1999) is presented in this paper.

A. Advances in Imaging Technology
Early in 1950's, the technology of oral radiology was limited only to capturing dental and jaw images on plain film. Oral radiologists in China invented a dental film cutter, a dental intensifying screen and investigated the management of dental radiographs and service work. Since the 1970's, intra-oral panoramic, pantomographic, cephalometric, linear tomographic and polytomographic techniques were gradually introduced and used in the practice of oral radiology. Many positioning devices were designed for research and service, such as positioning devices for a Schüller's Projection, an individual trans-cranial oblique projection, corrected lateral tomography of the temporomandibular joint (TMJ), skull base projection and cephalometry. These radiologists made important contributions to the development of oral radiology from its applications in only the dental field to those in the oral and maxillofacial field. Since the mid-1980's, radio-video technology, cineradiography, digital subtraction technology, CT, ultrasonography, scintigraphy and NMR have been used in the clinical application and research of oral radiology. Simultaneously, arthrography, sialography and angiography have also been developed more rapidly. With the development of imaging technology, oral radiology was extended rapidly from dental radiology into oral and
maxillofacial radiology and is now on the verge of being used in imaging diagnosis.

B. Contributions of Oral Radiology to Stomatological Medicine

A) Temporomandibular Joint diseases

In 1973, the first paper on arthrography in China was published by Zhao-ju Zou and her colleagues in the “National Medical Journal of China”, which was one of the pioneer journals in the field of TMJ arthrography. Conventional superior and inferior arthrography, double-contrast arthrography, and video dynamic observation after arthrography have since then been widely used in the diagnosis and research of temporomandibular disorders. Since 1988, digital subtraction arthrography has been used in the Peking University School of Stomatology (the former name is Stomatological School of Beijing Medical University), which led to a higher level of quality in the field of temporomandibular disorders (TMD) diagnosis. Several papers concerning radiographic diagnosis of TMD were published. The fact that the nature of the organic stage of TMJ dysfunction syndrome is actually a secondary degenerative arthrosis was proved by a comprehensive investigation involving radiographic, operative and pathological observations. The concept of “anterior disc displacement with reduction and without reduction” was introduced into China in 1982 and that of the so-called “rotating disc displacement” was suggested in 1983. The first CT and MRI investigations in TMD diagnosis in China were reported in 1984 and 1988, respectively. Then, several MRI investigations concerning TMD and the function of the lateral pterygoid muscle were reported. In 1985 and 1997, the diagnostic and classification criteria of TMD were respectively suggested based on several investigations of TMD in the field of radiology, pathology and clinical observation. Oral radiology made great contributions to our understanding of the field of temporomandibular disorders in China in the past 20 years.

B) Non-tumor diseases of salivary glands.

Early in 1954, Zhao-ju Zou published her first paper concerning sialography. Since then, sialography was widely used in the diagnosis of non-tumor diseases of the salivary glands in our country. In the late 1980’s and the early 1990’s, many investigations concerning the diagnostic value of sialography (including digital subtraction sialography) for Sjögren’s syndrome, a form of chronic purulent parotitis, were reported. In 1995, based on clinical investigations, laboratory tests, imaging diagnosis and ultrastructural studies, it was suggested that chronic purulent parotitis be classified into three types, children’s recurrent parotitis, adult’s recurrent parotitis and obstructive parotitis, and that these should be differentiated from the subclinical type of Sjogren’s syndrome, purulent inflammations secondary to Sjögren’s syndrome, and hypertropy of the salivary glands. This classification is very helpful for the diagnosis and treatment of non-tumor diseases of the salivary glands.

C) Tumors

With the developments of oral and maxillofacial surgery, imaging diagnoses of oral and maxillofacial tumors developed rapidly in the past 50 years, especially in the past 20 years with the application of ultrasonography, scintigraphy, CT, NMR and angiography in the clinics.

A) Salivary gland tumors

Early in the 1980’s, some Chinese