Plan to follow Principles: Designing of Cast Partial Dentures

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Suitable for All learners

The correct design of cast partial denture incorporates proper use and application of mechanical and biological principles. This principle enables the supporting teeth and the soft tissues to withstand the forces that will be created by the movement and stress placed on the prosthesis during function.

Since the removable partial dentures are not rigidly attached to teeth, the control of potential movement under functional load is critical to providing the best chance for stability. When we think about biomechanical principles, the prosthesis induces stress in the tissue equal to the force applied across the area of contact with the teeth and/or tissue. This same stress acts to produce strain in the supporting tissue, which results in a load displacement in the teeth and tissue. It is important that these stresses should not exceed the level of physiological tolerance, which is a range of mechanical stimulus that a system can resist without disruption or traumatic consequences.

In designing removable partial dentures, with a focus on the goal of providing and maintaining stable prostheses, consideration of basic biomechanical principles associated with the unique features of each mouth is essential.

The removable partial denture is a form of treatment not a cure. The design should be simple and should follow mechanical & biological standards. The mechanical phenomena act within a biological environment is unique to each patient. It has to be considered during designing as well as treating the patients in various clinical situations.

This pre-convention course highlights the principles of designing removable partial denture, with elaboration of treatment of different clinical cases.

- **Learning objectives: -** After attending this PCC, Post-graduate students will understand the details of management of various partially edentulous situations: -
  i) Different movements taking place around the teeth and soft tissues,
  ii) Importance of bio-mechanical considerations while designing,
  iii) To apply biological & mechanical principles during clinical practice.

- **Background information: -** In tooth supported or tooth-tissue partially edentulous situation, the amount of tissue movement taking place depends on the surrounding oral structures and the occlusal force falling on it from the opposing arch. The rigid denture is resting on the natural teeth and soft tissues, for which understanding the biologic & mechanical principles is very essential. Application of these principles will not only provide support, retention to the prosthesis, but also restore the esthetics and the function of mastication, by the preservation of the remaining dentition along with the supporting structures.

- **Important topics/concepts covered: -**
  i) Introduction
  ii) Biomechanical considerations of Removable Partial Denture
  iii) Essentials of basic principles of Partial denture design
  iv) Controlling Stress: Design Considerations
  v) Presentation of various clinical cases, with justification of their management.

- **Whether only lecture or includes any video demonstration: -** Only Lecture

• **Whether you will provide any learning materials (soft copy) to participants beforehand**	Yes, We will provide soft copy of handouts to all the participants, who will register for this PCC.