Common Causes of Wear of the ERA and other Attachments with Nylon Components

The following suggestions from the dental laboratory technicians and dentists on our technical staff, as well as some of our field survey labs, will contribute to extending the life of the prosthesis, as well as patient comfort and satisfaction.

Patient Consistently Bites the Overdenture Into Place
The patient should be instructed in how to insert the prosthesis into place with his/her fingers.

Cleaning Abutments or Females with an Abrasive Cleaner
Toothpaste can be very abrasive. The patient should be instructed to remove all traces of toothpaste after brushing. The abrasive in some toothpaste can cause extensive wear on the inside of the female when the male is inserted.

Denture Cleaners
Patients who use denture cleaner should be advised to follow the manufacturer's instructions. Most require a soak time of only 10 to 15 minutes then rinse and store overnight in only water. Patient should avoid leaving the overdenture in the cleaning solution for extended time or overnight since many cleaners can have a detrimental effect on the surface of the nylon males and cause them to loose their retention. The cleaning solution can actually attack the nylon of the males, causing it to soften in approximately 1-2 months. Solutions containing Chlorine may cause the nylon males to become hard and brittle. This will cause premature wearing of the males, and eventually, some wear of the females.

Insertion of the Blue or Grey Colored Male
The insertion of the blue or grey males prematurely can cause excessive wear in the male and possibly the female. Keep in mind that the least amount of retention required by the patient is best.

The dentist should always process the prosthesis first with the Black Fabrication Male, and then snap in the White Male Attachment which is the least retentive. Then, if the patient wants more retention, the Orange Male should be used. Only step up one degree of retention at a time.

ERA's and Tobacco Chewing
Silica in the juices created by chewing tobacco can be very abrasive, and may be a cause of wear to the male and the female.

Pickup of Attachments Chairside
The dentist should make sure that the patient does not bite down once the acrylic has been placed. We cannot determine the strength of a patient's bite. Too much pressure can cause the tissue to be displaced. Once the acrylic around the male has set and the pressure relaxed, the tissue returns to a normal state raising the attachment slightly. This can cause the attachment to snap in and out constantly as the patient talks or chews, causing excessive wear of the male and the female. To avoid this problem, have the patient bite passively, just enough to obtain the proper centric relationship. As patient relaxes bite, the dentist should passively hold the prosthesis in place until the acrylic cures.

Fabrication Tips for Plastic Females
Distal Extension (Reduced Vertical and Micro)
Although the ERA female is a plastic burnout pattern and can be cast in virtually any alloy, care should be taken to choose a hard alloy. The two most important aspects to consider are Vickers hardness and Ultimate Tensile strength. These attributes will provide optimum retention and long life of the female eyelet. A minimum Vickers of 200 and an Ultimate Tensile of at least 75,000 psi is recommended.

Overdenture
We should pay particular attention to the Overdenture application of ERA. Prescriptions in these cases often request a yellow crown and bridge alloy. In choosing this kind of alloy, use a type IV metal that allows you to harden the finished casting to a high Vickers Hardness. There are many of these on the market today including Stern's Apollo, a 45% type III-IV that can be hardened to 240 Vickers. Hardening techniques for C+B metals are relatively standardized. First, anneal the finished casting by heating and quenching and then harden by heating and slow cooling. (Refer to specific alloys manufacturer for temperatures and detailed hardening technique.) This is a simple step that can ensure a successful case.

WARNING: Great care must be taken when using debubblizers on plastic patterns. These materials may present problems in investing and burnout of the female ERA patterns. You must be sure that there are no puddles in or around the attachment. Also take care to fill the inside of the female pattern with a small brush before investing the rest of the pattern.

Finishing the Cast Females
Females are divested in a normal fashion by either sandblasting lightly or stripping in ultra-sonic solution. Care should be taken that the inside of the female is not over sandblasted as this will oversize the female eyelet. Glass beads or light polishing with rubber points can be used to create a clean finished look to this interior surface. The outside surface is not a crucial dimension and can be rubber wheeled and polished but should not require stone or carbide finishing.

Parallelism
ERA Attachments have been designed to function properly up to a divergence of 5˚. If the attachments are off by more than 5˚ you will not realize maximum life span of the males and could incur considerable wear on the females along with displacement of the appliance.

Path of Insertion
We would like to stress the importance of a short flange in the anterior region. Appliances designed to engage the labial undercut will interfere with proper seating. In cases of deep labial undercut, it should be blocked out before the processing of the denture base. Engage no more than 1 mm of undercut. Full extension of the flange into the vestibule will still provide lip support and help prevent food entrapment. It is desirable to provide full extension for stability whenever possible.

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