

# BUECHEL-PAPPAS™ TOTAL ANKLE REPLACEMENT\*

by  
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## CLINICAL EVALUATION AT 10 YEARS<sup>1</sup>

Buechel-Pappas™ (BP) cementless total ankle arthroplasties (TAA) (Endotec, Inc. South orange, NJ) were performed in 50 patients between January 30, 1991 and December 7, 1998 and followed over a 2 to 10 year period (mean 5 years). Diagnoses were 33 PTA, 7 RA, 8 OA and 2 AVN. Good to excellent clinical results were seen in 44 patients (88%). Fair results were seen in 3 patients (6%) and poor results were seen in 3 patients (6%); 2 of these suffered from persistent RSD despite well aligned components and one developed a medial malleolar stress fracture after 2 years from varus malalignment. Survivorship at the 10 year interval (endpoint: revision) was 93.5%.



## COMPONENT RELATED PROBLEMS REQUIRING REVISION

Revision was necessary in 2 patients (4%) for malalignment. One case involved tibial component (prosthesis) malposition too far anteriorly causing excessive wear and osteolysis (**CASE 1**) and the other was ankle (bony) malalignment into varus which progressed (**CASE 2**).

## CASE 1. TIBIAL COMPONENT MALPOSITION



### HISTORY

49 year old 5 foot, 9 inch tall, 190 pound, non-smoking white female developed severe PTA 5 years after ORIF of right ankle fracture. Hardware was removed after 2 years. ROM 5° dorsiflexion to 30° plantarflexion.



### PROBLEM

5 years after TAA the tibial component was malpositioned anteriorly relative to the talar component. Severe bearing wear was seen laterally. Tibial osteolysis was also seen laterally and medially with minimal clinical symptoms.



### SOLUTION

1 year after repositioning the tibial component and bone grafting the osteolytic cysts, the patient was asymptomatic. ROM 10° dorsiflexion to 40° plantarflexion

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## **CASE 2. ANKLE MALALIGNMENT INTO VARUS**



### **HISTORY**

32 year old, 5 foot, 9 inch tall, 152 pound white male alcoholic and heavy cigarette smoker developed 15° varus malunion and severe PTA 2 years after ORIF for a closed pilon fracture. ROM 5° to 15° plantarflexion.



### **PROBLEM 2.**

8 months after realignment osteotomy and fibular plating a non union developed with 11° recurrent varus deformity.



### **MALALIGNMENT**

6 weeks after TAA there is 15° varus malalignment of ankle joint and components.



### **SOLUTION**

4 years after bone graft and long stem tibial component the ankle joint had a 6° stable varus alignment. ROM 0-15° plantarflexion.



### **PROBLEM 1.**

2 years one month after TAA a medial malleolar stress fracture and distal fibular stress fracture caused 20° progressive varus malalignment.

### **Reference:**

1. Presented at the 26th Orthopedic Surgery and Trauma Society, Domenica, West Indies., June 19, 2000. (Emmet Lunceford Scientific Award)

