Dr. Heithersay, two cases of impacted canines with PEIR and transplantation.

In our endodontic clinic we have treated two cases with similar histories of frustrated orthodontic treatment where no movement could be activated despite similar  coronal exposure as that carried out for Sam . One of these cases also had pre-eruptive invasive coronal resorption. After a multidisciplinary consultation involving an orthodontist, and a peridontist and our endodontic group, it was decided in both cases to treat the unerupted teeth be intentional transplantation, with concurrent treatment of the resorptive defect and endodontic treatment in the case with pre-eruptive invasive coronal resorption. The teeth were very carefully removed surgically with special attention  to avoid damage to the root surface. Before the teeth were transplanted into a newly created socket site, the root sufaces were treated with Emdogain and after transplantation, the bone defect was filled with a combination of Bio-oss and Collagen  and the area was then covered with Bioguide which is a resorbable membrane. In the tooth without the pre-eruptive invasive coronal resorption, endodontic treatment was commenced prior to the transplantation, but an intra-canal dressing was placed incorporating a cortico-steroid antibiotic combination as this has been shown to control potential reesorption. The tooth will be root filled after some weeks.

The patient with the pre-eruptive resorption has been followed up for two years to date and there has been excellent progress.

Transplantation of unerupted canines is not a new technique- it has been used for many years- an orthodontist named Moss published an impressive series in the early 70's while an extensive study has been carried out by Dr Jens Andreasen of Copenhagen- he and his surgical team have very impressive results.

You may be able to buy on Amazon his book dealing with this topic. We believe that the methods we have used which have incorporated some recently developed additional biological materials.

I agree with the comments made by Dr Becker in respect to pre-eruptive coronal resorption- the dynamics of this resorptive process are such that unless it is separated from its vascular supply, it will progress.

As I have said before it would appear that it is time to give Sam a break and use a another technique which will bring his orthodontic saga to a conclusion. Of course no treatment is 100% successful, but Andrease's results suggest a high level of satisfactory tooth retention.

Asking Dr. Heithersay to comment on Dr. Pamela L. Alberto in SROMS"Canine transplantation should be planned when the root is 50% to 75% formed...Transplantation of the mandibular canine can also be successful

if the apex of its root has not closed."

While planned transplantation of teeth is ideally done before the completion of root development as stated by Dr Alberto- the reason being that such teeth can continue root development in their new site and endodontic treatment can usually be avoided. All the main research related to this procedure can be found in the references I have already sent to you. However this does not preclude transplantation of a tooth with completed root development- but endodontic treatment as part of the process is indicated. This can either be carried out on the extracted tooth before transplantation, with great care not to damage the periodontal ligament. Alternatively it is carried out within approximately 2 weeks post transplantation. In both our cases, it was carried out prior to transplantation, but an intra-canal dressing was placed in both instances and the final root filling delayed for several weeks.

I guess you have already explored the possibility of extracting the unerupted teeth and closing the spaces orthodontically. Premolars can, with a little anatomical modification, successfully provide an aesthetic and functional solution.