Automatic analysis of a client presenting with lateralised palatal substitution for /r/

02SSD Crab /r/ Pre therapy

02SSd Crab /r/ Post therapy (Blue arrows indicate constrictions)

Pre-post comparison by moving the vocal tracts so the hard palates line up. - Pre contour is missing the pharyngeal constriction. It is also possible/likely that there is a raised tip which is invisible in the pre-therapy articulation. Missing tip information is a significant issue. The blue box indicates the front cavity required for an /r/. If there is a tip projecting into that space pre-therapy it will make a big difference to the acoustic percept.
Blue arrows indicate post alveolar and pharyngeal constrictions. Blue box indicates front cavity. All three features are required for a good /r/. In this case the front constriction is formed by bunching rather than retroflexion.

02SSd Crab /r/ Pre therapy (Possible tip added in orange)
02SSd Crab /r/ Post therapy