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The Effect of Combined Sugar-Tong and Long-Arm Splinting on Fracture Displacement in Children with Complete Forearm Fractures

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ABSTRACT

Introduction: Pediatric complete forearm fractures may redisplace after closed reduction, potentially causing functional impairment and requiring repeat intervention. Although long-arm and sugar-tong splints can restrict motion and accommodate swelling, the effectiveness of their combined use remains uncertain. This study aimed to evaluate the effect of combined sugar-tong and long-arm splinting on fracture displacement in children with complete forearm fractures.

Material and methods: This randomized clinical trial at Shohada Hospital, Tabriz, evaluated 50 children with complete forearm fractures requiring closed reduction (25 per group, calculated via the two-independent-means formula). Participants were randomly assigned to combined sugar-tong and long-arm splinting or standard long-arm splinting alone. Serial radiographs were obtained from post-reduction through early follow-up to evaluate changes in fracture angulation and translation between the two immobilization methods.

Results: The combined splint group maintained better alignment than the standard splint group, with lower AP angulation, lateral angulation, translation, and shortening at follow-up (week 1 and 2, all $P \leq 0.001$); it also had fewer losses of reduction (8.0% vs. 36.0%, $P=0.014$) and remanipulations (4.0% vs. 24.0%, $P=0.037$), while parental satisfaction was higher (8.6 ± 1.1 vs. 6.8 ± 1.5, $P<0.001$).

Conclusion: Combined sugar-tong and long-arm splinting was more effective than standard splinting in preserving reduction and preventing secondary displacement in children with complete forearm fractures, without increasing complications. This simple immobilization strategy may improve early fracture stability and reduce the need for repeat intervention.

Introduction

Pediatric forearm fractures are among the most common skeletal injuries encountered in emergency and orthopedic practice. They typically result from falls onto an outstretched hand, sports-related trauma, or playground injuries. Although many fractures in children can be managed nonoperatively, complete fractures involving both the radius and ulna require careful attention because they may be unstable after reduction.

Their treatment must address pain, deformity, maintenance of alignment, and preservation of normal upper-limb function. Appropriate early immobilization is therefore a central component of successful conservative management in children with complete forearm fractures [1].

The radius and ulna function as a coordinated anatomical unit that permits pronation and supination through their relationship with the proximal and distal radioulnar joints and the

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interosseous membrane. A fracture affecting both bones can disrupt this functional system and alter forearm mechanics. Even when radiographic healing occurs, residual angulation, translation, shortening, or rotational malalignment may restrict motion and impair daily activities. Consequently, treatment should aim not merely for bone union but for restoration and maintenance of acceptable anatomical alignment. This is especially relevant in diaphyseal fractures, where remodeling potential is less reliable than in metaphyseal injuries near the growth plate [2].

Children have a greater capacity for fracture remodeling than adults; however, this capacity varies substantially according to age, fracture location, and the plane of deformity. Younger children may tolerate a greater degree of angular deformity, whereas older children approaching skeletal maturity have limited potential for correction. Rotational malalignment is particularly concerning because it does not remodel predictably and may result in permanent loss of forearm rotation. Complete fractures of the forearm should therefore be monitored closely after reduction, particularly in older children and in those with substantial initial displacement or unstable fracture configurations [3].

Closed reduction followed by immobilization remains the first-line treatment for many closed, displaced complete forearm fractures in children. Reduction restores length, alignment, and rotational relationships, while immobilization protects the fracture until callus formation develops. Nevertheless, the initial reduction may not be maintained during early follow-up. Secondary displacement is a clinically important complication because it can lead to repeated manipulation, prolonged immobilization, surgical intervention, and additional emotional and financial burden for families. Therefore, the effectiveness of immobilization should be evaluated not only by immediate post-reduction alignment but also by its ability to prevent further displacement over time [4].

Long-arm immobilization has traditionally been used for pediatric forearm fractures because it limits elbow movement and reduces pronation-supination of the forearm. By controlling rotational forces, a long-arm cast or splint may improve fracture stability after closed reduction. However, conventional circumferential casting in the acute phase can be challenging, particularly when substantial swelling is anticipated. Swelling within a rigid cast may increase discomfort and create concern for skin pressure, neurovascular compromise, or the need for cast splitting. For this reason, noncircumferential splinting is commonly preferred immediately after reduction in many clinical settings [5].

The sugar-tong splint is frequently used for injuries of the wrist and forearm because it provides support on both the dorsal and volar aspects of the limb while limiting rotational motion. Its configuration wraps around the elbow and helps resist pronation-supination without fully encircling the limb. This design may offer an important advantage in the acute phase by allowing room for swelling while maintaining a degree of mechanical stability. In children with forearm fractures, sugar-tong splinting may therefore represent a useful alternative or supplement to more traditional immobilization methods [6].

Despite its potential benefits, a sugar-tong splint alone may not provide adequate control for all complete forearm fractures. Fractures involving both bones may be exposed to deforming forces produced by muscle activity, gravity, patient movement, and incomplete restriction of elbow motion. These forces can result in recurrent angulation or translation, particularly when fracture instability is high. The addition of a long-arm splint may improve the overall rigidity of the construct by enhancing elbow control and maintaining the limb in a more stable position. Combining both techniques may theoretically provide more effective protection against redisplacement than either method used independently [7].

The rationale for simultaneous sugar-tong and long-arm splinting is based on the need to control multiple forms of fracture movement. Complete forearm fractures may displace through angulation in the coronal or sagittal plane, shortening, translation, or rotation. A long-arm component can limit elbow motion and support overall forearm alignment, whereas the sugar-tong component can reinforce resistance to rotational and bending forces. Together, these splints may create a more stable noncircumferential immobilization construct during the critical period before biological healing provides intrinsic fracture stability [8].

Loss of reduction after nonoperative treatment is influenced by several patient- and fracture-related factors. Greater initial displacement, incomplete reduction, older age, fracture location, poor cast or splint molding, and associated soft-tissue injury have all been associated with instability. Complete fractures are generally more prone to redisplacement than incomplete fractures because cortical continuity is lost. In addition, swelling may decrease after the initial injury, resulting in loosening of the immobilization device and reduced mechanical support. Identifying an effective splinting strategy is therefore particularly important in children at increased risk of early loss of alignment [9].

The first two to three weeks after reduction are generally considered the period of greatest concern for fracture redisplacement. During this stage, the fracture remains mechanically vulnerable because sufficient callus has not yet developed. Serial radiographic evaluation is commonly performed to identify changes in alignment before they become clinically significant. Radiographic measures such as angulation, translation, shortening, and maintenance of reduction are useful indicators of treatment success. A splinting method that minimizes changes in these variables may reduce the need for repeat reduction or operative fixation and improve the efficiency of conservative fracture management [10].

The selection of immobilization technique may also influence patient comfort, safety, and the practical delivery of care. A combined sugar-tong and long-arm splint can generally be applied with readily available materials and does not require specialized equipment. It may be particularly useful in emergency departments and trauma centers where immediate postoperative or post-reduction swelling is expected. If this approach provides sufficient stability while avoiding the risks of immediate circumferential casting, it could offer a practical option for clinicians managing pediatric complete forearm fractures. However, its clinical effectiveness should be determined through objective assessment rather than routine preference alone [11].

Current practice varies widely regarding whether children with displaced forearm fractures should receive immediate casting, a long-arm splint, a sugar-tong splint, or a combination of immobilization methods. This variation reflects differences in institutional protocols, provider experience, fracture characteristics, and concerns regarding swelling or redisplacement. Although prior research has evaluated several casting and splinting approaches, evidence specifically addressing simultaneous sugar-tong and long-arm splinting in children with complete forearm fractures remains limited. Further investigation is needed to clarify whether this combined approach improves the maintenance of reduction during early follow-up [12].

Preventing secondary displacement has implications beyond radiographic appearance. Maintaining acceptable alignment may reduce the likelihood of repeat sedation, remanipulation, surgery, prolonged treatment, and functional limitation. It may also decrease the number of unplanned hospital visits and lessen anxiety for children and their caregivers. Since pediatric forearm fractures are frequent and are commonly managed without surgery, even a modest improvement in immobilization effectiveness could have meaningful benefits at both the individual and healthcare-system levels. A simple, reproducible, and safe splinting method would therefore be valuable in routine pediatric orthopedic practice [13].

The assessment of combined splinting should focus on clinically meaningful changes in fracture alignment after immobilization. Comparing radiographic displacement before and after application can help determine whether the construct adequately controls fracture motion. Such evaluation may also identify patient subgroups that benefit most from combined splinting, including children with unstable patterns, marked initial displacement, or fractures requiring substantial manipulation. Establishing evidence regarding this method may contribute to more standardized conservative-treatment protocols and support informed clinical decision-making in emergency and orthopedic settings [14].

Given the frequency of complete forearm fractures in children and the consequences of loss of reduction, optimizing early immobilization remains an important clinical priority. Combined sugar-tong and long-arm splinting may provide a practical balance between mechanical stability and accommodation of acute swelling, but its ability to limit fracture displacement requires systematic evaluation. Therefore, this study aimed to assess the effect of simultaneous sugar-tong and long-arm splinting on the degree of fracture displacement in children with complete forearm fractures.

Material and methods

Study Design

This randomized clinical trial was conducted at Shohada Hospital, Tabriz, Iran. Eligible children with complete forearm fractures requiring closed reduction were enrolled and randomly allocated to either combined sugar-tong plus long-arm splinting (intervention group) or standard long-arm splinting alone (control group). Randomization was performed using a computer-generated random sequence with concealed allocation in sequentially numbered opaque envelopes. The primary outcome was change in radiographic fracture displacement during early follow-up.

Sample Size and Sampling

Sample size was estimated using the two-independent-means formula: n=2(Z1−α/2+Z1−β)2σ2d2 Considering a two-sided confidence level of 95%, statistical power of 80%, an anticipated clinically meaningful difference in displacement between groups, and an estimated standard deviation derived from previous comparable studies, 25 participants were required in each group. To compensate for potential attrition, recruitment continued until at least 25 children per group completed follow-up. Participants were recruited through convenience sampling among eligible children presenting to the emergency department or orthopedic service.

Inclusion and Exclusion Criteria

Children aged 4-14 years with a closed, complete fracture of the radius and ulna at the proximal, middle, or distal forearm shaft were eligible if they required closed reduction and had acceptable post-reduction alignment. Additional inclusion criteria were presentation within 7 days of injury, intact distal perfusion and neurological status after reduction, availability of standard radiographs, and parental or legal guardian written informed consent. Children were excluded if they had open fractures; pathological fractures; isolated radial or ulnar fractures; greenstick, buckle, or plastic-deformation injuries; intra-articular extension; associated ipsilateral upper-limb fractures or dislocations; neurovascular injury requiring operative exploration; compartment syndrome; previous deformity or surgery of the involved forearm; metabolic bone disease; neuromuscular disorders; inability to attend scheduled follow-up; or a clinical indication for immediate operative fixation.

Procedure

After initial clinical evaluation, standard anteroposterior and lateral radiographs of the affected forearm, including the wrist and elbow where indicated, were obtained. Closed reduction was performed under appropriate analgesia or procedural sedation by an orthopedic specialist or supervised resident. Following confirmation of acceptable alignment on post-reduction radiographs, patients were randomly assigned to the intervention or control group. In the intervention group, a sugar-tong splint was applied concurrently with a long-arm splint to limit elbow movement, pronation-supination, angular displacement, and translational movement while allowing for acute soft-tissue swelling. In the control group, a conventional long-arm splint was applied with the elbow flexed at approximately 90 degrees and the forearm positioned according to fracture configuration.

Demographic and clinical variables included age, sex, affected side, hand dominance, injury mechanism, time from injury to reduction, fracture level, fracture pattern, initial displacement, and need for repeat reduction. Radiographic variables included coronal and sagittal angulation, translation, shortening, and overall maintenance of acceptable alignment immediately after reduction and at scheduled follow-up visits. Radiographs were assessed at baseline, immediately after immobilization, and during the first and second weeks after treatment. The primary outcome was the degree of change in fracture displacement between post-reduction and follow-up radiographs. Secondary outcomes included loss of reduction, requirement for manipulation or surgical fixation, splint-related complications, neurovascular status, pain, and the need to convert the initial splint to a circumferential cast after resolution of swelling.

Statistical Analysis

All analyses were performed using SPSS software, and normality of continuous variables was confirmed using the Shapiro-Wilk test and graphical assessment of distribution. Continuous data were expressed as mean ± standard deviation, whereas categorical variables were reported as frequency and percentage. Independent-samples t tests were used to compare continuous variables between the intervention and control groups, while paired-samples *t* tests assessed within-group changes in radiographic displacement over time. Chi-square or Fisher's exact tests were applied for categorical variables, including loss of reduction, need for repeat intervention, and splint-related complications. Repeated-measures analysis of variance was used to compare serial radiographic measurements across follow-up assessments. A two-sided *P* value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study protocol was approved by the Ethics Committee of Tabriz University of Medical Sciences (Ethics Code: IR.TBZMED.REC.1403.462). Written informed consent was obtained from parents or legal guardians before enrollment, and assent was obtained from children whenever appropriate for age and comprehension. Participation was voluntary, and families could withdraw at any time without affecting the child's routine care. Patient information was coded and stored confidentially, and all procedures were performed in accordance with ethical principles for research involving human participants.

Results

Baseline demographic and clinical characteristics of the study population are summarized in Table 1. The two groups demonstrated statistical homogeneity across all evaluated parameters, confirming the successful randomization of the cohort. The mean age was 8.9 ± 2.4 years in the combined splint group and 9.1 ± 2.6 years in the standard splint group (P=0.779). Gender distribution, laterality, and hand dominance were evenly balanced between the cohorts (P>0.05). Furthermore, clinical variables including injury mechanism, anatomical fracture location, and initial radiographic angulation showed no significant intergroup differences (P>0.05 for all variables), ensuring that any subsequent variance in outcomes could be attributed to the intervention rather than pre-existing clinical disparities.

Table 1. Baseline Demographic and Clinical Characteristics of the Study Population

Variable	Combined Splint Group (n = 25)	Standard Splint Group (n = 25)	P-value
Age, years, mean ± SD	8.9 ± 2.4	9.1 ± 2.6	0.779
Male sex, n (%)	16 (64.0)	17 (68.0)	0.765
Female sex, n (%)	9 (36.0)	8 (32.0)	0.765
Right side involved, n (%)	14 (56.0)	15 (60.0)	0.777
Left side involved, n (%)	11 (44.0)	10 (40.0)	0.777
Dominant hand affected, n (%)	13 (52.0)	12 (48.0)	0.777
Injury mechanism, n (%)		-	0.893
- Fall from height / playground	15 (60.0)	14 (56.0)	-
- Sports activities	7 (28.0)	8 (32.0)	-
- Direct trauma / road accident	3 (12.0)	3 (12.0)	-
Fracture location, n (%)	-	-	0.912
- Proximal third	2 (8.0)	3 (12.0)	-
- Middle third (diaphyseal)	18 (72.0)	17 (68.0)	-
- Distal third	5 (20.0)	5 (20.0)	-
Time from injury to reduction, hours, mean ± SD	4.6 ± 1.8	4.9 ± 2.1	0.592
Initial AP angination, degrees, mean ± SD	14.8 ± 3.9	15.2 ± 4.1	0.725
Initial Lateral angulation, degrees, mean ± SD	18.6 ± 4.5	19.1 ± 4.8	0.707

As shown in Table 2, the two groups were comparable immediately after reduction, with no significant between-group differences in AP angulation, lateral angulation, fracture translation, or shortening. However, clear divergence emerged during follow-up: by week 1 and, more prominently, by week 2, the combined splint group demonstrated significantly smaller increases in AP and lateral angulation, lower translational displacement, and less shortening than the standard splint group. These findings indicate that the combined splint construct provided superior maintenance of fracture alignment over time and was more effective in preventing secondary displacement during the early healing period.

Table 2. Radiographic Parameters and Fracture Displacement Variations Across Follow-up Intervals

Variable	Combined Splint Group (n = 25)	Standard Splint Group (n = 25)	P-value
AP Angulation (degrees), mean ± SD			
Immediate post-reduction	2.1 ± 1.1	2.3 ± 1.2	0.548
Week 1 follow-up	3.4 ± 1.8	5.8 ± 2.6	0.001
Week 2 follow-up	4.2 ± 2.1	7.9 ± 3.4	< 0.001
Lateral Angulation (degrees), mean ± SD			
Immediate post-reduction	3.2 ± 1.4	3.5 ± 1.6	0.485
Week 1 follow-up	4.9 ± 2.2	8.1 ± 3.1	< 0.001
Week 2 follow-up	5.8 ± 2.5	11.2 ± 4.3	< 0.001
Fracture Translation (%), mean ± SD			
Immediate post-reduction	4.5 ± 2.3	4.8 ± 2.6	0.669
Week 1 follow-up	7.2 ± 3.1	14.6 ± 5.8	< 0.001
Week 2 follow-up	8.9 ± 3.7	19.4 ± 7.2	< 0.001
Ulna/Radius Shortening (mm), mean ± SD			
Immediate post-reduction	0.4 ± 0.2	0.5 ± 0.3	0.174
Week 2 follow-up	0.8 ± 0.4	2.1 ± 0.9	< 0.001

The primary clinical outcomes and safety profiles of the treatment groups are detailed in Table 3. The combined splint construct demonstrated clinical superiority, yielding a significantly lower incidence of loss of reduction compared to the standard splint (8.0% vs. 36.0%, P=0.014). Consequently, the requirement for closed manipulation under sedation was also significantly reduced in patients immobilized with the combined technique (4.0% vs. 24.0%, P=0.037). While surgical conversion and minor soft-tissue complications including localized skin blistering and transient paresthesia did not differ significantly between cohorts, parental satisfaction was significantly higher in the combined splint group (mean VAS score 8.6 ± 1.1 versus 6.8 ± 1.5, P<0.001), reflecting the enhanced clinical stability and reduced need for secondary therapeutic interventions.

Table 3. Clinical Outcomes, Complications, and Treatment Failure Rates

Variable	Combined Splint Group (n = 25)	Standard Splint Group (n = 25)	P-value
Loss of reduction, n (%)	2 (8.0)	9 (36.0)	0.014
Need for manipulation, n (%)	1 (4.0)	6 (24.0)	0.037
Surgical conversion (K-wire fixation), n (%)	1 (4.0)	3 (12.0)	0.292
Pressure injuries / skin blistering, n (%)	1 (4.0)	0 (0.0)	0.312
Severe soft tissue swelling / edema, n (%)	2 (8.0)	3 (12.0)	0.637
Transient paresthesia / neurological symptoms, n (%)	0 (0.0)	1 (4.0)	0.312
Cast index (post-reduction), mean ± SD	0.79 ± 0.04	0.81 ± 0.05	0.126
Parental satisfaction (VAS score 0-10), mean ± SD	8.6 ± 1.1	6.8 ± 1.5	< 0.001

As illustrated in Figure 2, both groups showed low residual angulation immediately after reduction, indicating an initially comparable alignment. However, a progressive divergence became evident during follow-up, with the standard splint group demonstrating a steeper increase in fracture angulation over time, particularly by week 1 and week 2. In contrast, the combined splint group maintained a more stable alignment, with only minimal upward change in angulation across the observation period. Overall, the figure indicates that the combined splint construct was more effective in preserving reduction and limiting secondary displacement during the early healing phase.

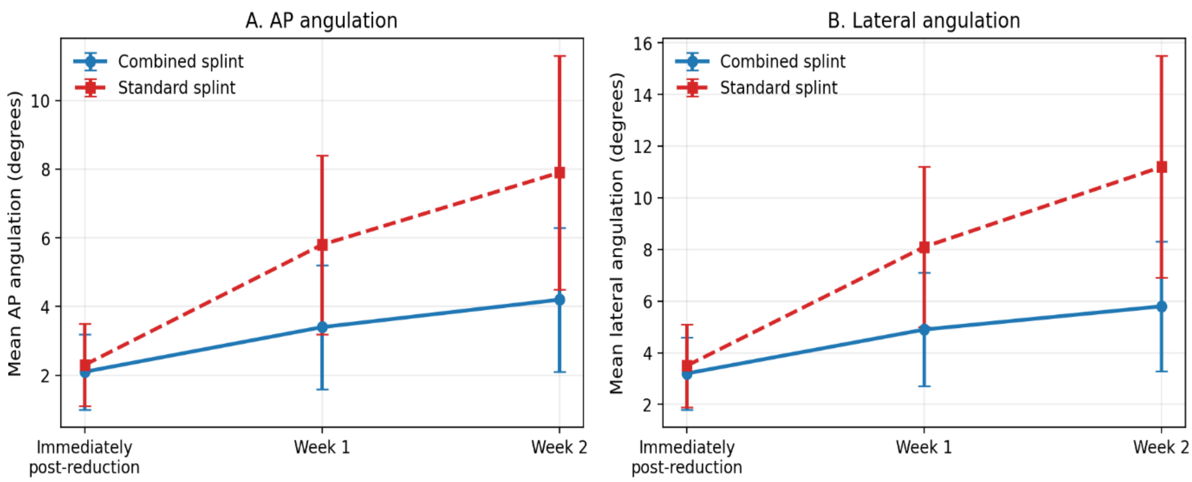

Figure 3. Temporal Changes in Mean Fracture Angulation After Reduction in the Combined Splint and Standard Splint Groups

Discussion

The present randomized trial showed that both immobilization methods achieved similar initial reduction, but the combined sugar-tong and long-arm splint provided better maintenance of alignment during follow-up. By week 1 and especially week 2, the standard splint group exhibited greater increases in AP and lateral angulation, higher translational displacement, and more shortening, whereas the combined splint group remained more stable radiographically. Clinically, this mechanical advantage translated into fewer loss-of-reduction events, less need for manipulation, and higher parental satisfaction, while complication rates remained low in both groups [10,11].

These findings are clinically important because the early post-reduction period is the most vulnerable phase for secondary displacement in pediatric complete forearm fractures. Although closed reduction may restore acceptable alignment initially, maintaining that correction is often difficult in children with unstable fracture patterns, especially when swelling evolves and the cast-splint construct loosens slightly over time. In this context, the combined construct likely offered superior control of both rotational and angular forces, thereby resisting the gradual drift in alignment that was observed in the standard splint group [12,13].

A plausible explanation for the improved performance of the combined splint is its biomechanical effect on forearm immobilization. Sugar-tong splinting limits pronation and supination by spanning the elbow and wrapping around the forearm, while a long-arm component adds further restraint against elbow motion and rotational stress transmitted through the fracture site. When used together, these two elements may create a more circumferential and anatomically conforming immobilization environment, reducing micromotion at the fracture ends. This is particularly relevant in complete fractures, where cortical disruption and periosteal compromise make the construct inherently less stable than greenstick or buckle injuries [14,15].

Another important factor is the interaction between soft-tissue swelling and cast stability. In children, post-injury edema commonly increases during the first several days after reduction, which can reduce effective immobilization if the splint is not sufficiently adaptive. A purely standard splint may not maintain uniform pressure and three-point fixation as swelling subsides, potentially allowing subtle loosening and progressive displacement. By contrast, the combined sugar-tong and long-arm construct may distribute pressure more evenly across the limb, preserve reduction despite changes in soft-tissue volume, and reduce the likelihood of cast failure in the early follow-up period [16,17].

The lower rate of loss of reduction in the combined splint group is especially meaningful because redisplacement is one of the main reasons for repeat intervention in pediatric forearm fractures. Once angulation or translation exceeds acceptable limits, closed manipulation becomes necessary, and in some cases operative fixation may be required. Our data suggest that enhanced immobilization can reduce the need for such secondary procedures, which is beneficial not only for fracture healing but also for resource utilization, procedural burden, and family anxiety. In practical terms, avoiding manipulation is particularly valuable in children because it decreases the need for sedation, repeated radiography, and additional hospital visits [18,19].

The similarity in surgical conversion rates between groups likely reflects the relatively small sample size and the fact that operative fixation is generally reserved for more severe instability or unacceptable redisplacement. Even so, the direction of effect still favored the combined splint. The absence of a clear difference in minor complications is reassuring, because any more restrictive construct would be expected to raise concern for skin injury, pressure effects, or neurovascular complaints. In this trial, the combined method appeared to improve stability without introducing clinically important safety concerns, which supports its feasibility in routine pediatric orthopedic practice [20,21].

Parental satisfaction was also significantly higher in the combined splint group, and this is an important outcome in pediatric fracture care. Families often judge treatment quality not only by radiographic results but also by the perceived security of immobilization, the frequency of follow-up problems, and whether the child requires repeat procedures. A construct that better preserves reduction may reduce parental concern and improve confidence in treatment. In addition, children who avoid manipulation or conversion to surgery are likely to experience a smoother recovery trajectory, which may further contribute to the higher satisfaction scores reported in this study [22,23].

Taken together, the results indicate that the benefit of the combined splint is not simply statistical but mechanistic and clinically meaningful. It appears to function by improving rotational control, maintaining three-point molding, and resisting the destabilizing effects of swelling and daily activity. This is consistent with the concept that successful nonoperative management of complete forearm fractures depends less on the initial reduction alone and more on the durability of immobilization during the first 1 to 2 weeks. In other words, the most important advantage of the combined construct may be its ability to preserve what was achieved in the emergency setting [24,25].

The findings of the present study may therefore influence everyday management of pediatric complete forearm fractures, especially in children with borderline stability after reduction. For patients at increased risk of redisplacement, such as those with marked initial displacement, suboptimal cast molding, or substantial swelling, the combined sugar-tong and long-arm approach may offer a simple and low-cost way to improve early fracture control. Because the method does not require specialized implants or advanced operative resources, it is especially attractive in settings where treatment efficiency and accessibility matter [26,27].

Nevertheless, several limitations should be acknowledged. The sample size was modest, follow-up was limited to the early healing period, and the study was conducted at a single center, which may limit generalizability. In addition, although radiographic stability and parental satisfaction were captured well, longer-term functional outcomes, time to union, and patient-reported quality-of-life measures were not fully assessed. Future multicenter trials with larger samples and longer follow-up should confirm whether the early mechanical advantage of the combined splint also translates into better long-term functional recovery [28,29].

In summary, the combined sugar-tong and long-arm splint was more effective than the standard splint in maintaining fracture alignment after closed reduction in children with complete forearm fractures, and it did so without increasing clinically relevant complications. The superior radiographic stability, reduced need for repeat intervention, and higher family satisfaction together suggest that this method may represent a more reliable immobilization strategy for unstable pediatric forearm injuries [30,31].

Conclusion

Combined sugar-tong and long-arm splinting was more effective than standard splinting in preserving reduction and preventing secondary displacement in children with complete forearm fractures, without increasing complications. This simple immobilization strategy may improve early fracture stability and reduce the need for repeat intervention.

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Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

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