

Luke D. Cicchinelli and David Granger

Obtaining effective long-term results for the surgical correction of hallux valgus perhaps epitomizes most of any deformity within the foot and ankle, the adage that surgery is both art and science. The effective long-term correction of recurrent hallux valgus therefore adds levels of complexity and challenges both technically for the surgeon as well as expectation wise for the patient. Patients electing to undergo surgery for the correction of their painful bunion deformity have fairly basic desires. They would like the correction to look good, feel good, and be lasting with minimal disruption to their everyday life. By its very presence, the outcome of an index surgery that later necessitates a second intervention has failed all those patient desires. This heightens tremendously the importance of effective surgeon-patient communication and realistic appraisals by the surgeon as to their own personal skill set, knowledge base, and specifically those patient's expectations. A viable outcome formula characterizing the interplay between these variables may be considered as $\text{outcome} = \text{surgeon knowledge} \times \text{patient expectations} / \text{surgical execution}$. Clinical experience by the author has led to the additional surgical adages of a prudent reconstructive effort that seeks "to do the least possible and yet the most necessary" and the realization that "almost everything can work—incompletely, and almost nothing works—completely."

This chapter does not seek to repeat nor simply reiterate previously published material on this topic. The reader is referred to two excellent background resources for a general and specific overview on this: *Complications in Hallux Abducto Valgus Surgery* by Molly Judge in the fourth edition of *McGlamry's Comprehensive Textbook of Foot and*

Ankle Surgery and *Recurrent Hallux Valgus: Treatment Considerations* by Michael Lyons et al. in the 2009 Update of *The Podiatry Institute* [1, 2]. Rather this chapter seeks to clinically and radiographically illustrate the authors' and several other seasoned clinicians' experiences and results in addressing this challenging deformity while expounding on in case format style the variety of technical and patient-specific considerations that lead to the only thing a patient cares about—a satisfying and lasting result. To avoid duplication of material to be covered in other chapters of this text and complete clarity on the specific clinical contribution the authors wish to share, the authors have made several assumptions. The cases discussed deal only with under-corrected metatarsal osteotomies in which the bone healing was uneventful with no failure of internal fixation or nonunions, or avascular necrosis, or infectious processes. Recurrent hallux valgus specific to the use of the Lapidus procedure as the initial choice of the index correction is similarly excluded although the Lapidus will be discussed as a frequently viable definitive solution to the recurrent deformity of under-corrected intermetatarsal angles in general. As well, complications of hallux valgus surgery primarily causing elevation and shortening of the first ray and insufficiency issues that require plantarflexory osteotomies or callus distraction type approaches are excluded. Those deformities are necessarily included when there has been an under-corrected osteotomy or intermetatarsal angle or unrecognized hypermobility that may even require additional surgery beyond the first ray.

The cases will specifically go beyond the X-rays and consider in detail the importance of the true chief complaint of a patient now dealing with a failure of a previous surgery as the author has found this to be perhaps the single most important factor in ensuring a successful outcome and patient satisfaction. This includes as well the consideration as to whether the original surgeon is performing the revisional surgery or a new surgeon is taking on the revisional case due to patient dissatisfaction. This can factor tremendously into effective solutions for these cases and procedural selection. For example, a patient may be more amenable to the original

L.D. Cicchinelli (✉)
Centro Clinico Quirurgico,
Pintor Colmeiro 10 bajo, Vigo 36210, Spain
e-mail: luke@cicchinelli.com

D. Granger
OSS Health, 1855 Powder Mill Road, York, PA 17402, USA

surgeon “tweaking” or “redoing” a portion of the previous surgery such as adding in a phalangeal osteotomy as a second intervention due to under-correction, whereas an upset and dissatisfied patient seeking a new provider may be much more demanding toward a complete overhaul or redo of the original surgery. Many years of clinical practice with high volumes of hallux valgus surgery have taught that both approaches can work. This underlies the continued importance of awareness to the previously mentioned outcome formula and in particular to the denominator which is patient expectations. The higher they are, as a denominator, the more difficult is a highly positive outcome. The lower they are, a higher positive outcome is more likely.

Recurrent hallux valgus and residual hallux valgus are essentially interchangeable terms. The patient expected a definitive resolution of their bunion deformity and did not receive one. Clearly the critical step of assessment for the revisional surgery is why didn't they? Anatomically and radiographically this requires an inventory approach to what the patient started out with, what they presently have, and how will what was done allow or not allow an effective second surgery. Initially the surgeon should contemplate whether the original procedure ever had a chance of working or rather was there insufficient attention to the interplay between dynamic soft tissue forces and structural first ray issues. The lack of a structural repair such as an under-shift of an osteotomy typically will recur more quickly, while the lack of accurate soft tissue balancing may produce a more delayed recurrence. Which component, the soft tissue or the structural component, has the dominant residual effect on the recurrence? There has been substantial debate over the last several years as to whether lateral soft tissue releases are necessary in the surgical correction of hallux valgus. It bears emphasis that this debate is more pertinent to the initial surgery and that in revisional cases there is almost always a necessity for releases of deforming soft tissue forces. Inappropriate procedural selection for a deformity just too severe for what was done and poor execution of a reasonable procedure are factors to entertain as well. For example, if there was adequate procedural selection but inadequate correction obtained, is it possible that the same procedure may simply be redone? These preoperative queries require thoughtful consideration of whether it is better to avoid a redo surgery through the zone of a previous osteotomy which may also increase the likelihood of more scar tissue and joint contractures or bone healing issues or is it preferable to choose a completely new procedure for the revision. The surgeon should do a careful assessment of the presence of systemic factors un- or underappreciated at the time of the original surgery such as spasticity, undiagnosed arthritides, suprastructural biomechanical forces such as torsional issues and pes valgo planus, and unstable hindfeet or even pregnancy and ligamentous laxity. Was there unrecognized hypermobility

of the first ray segment? There may be very specific unrecognized deformities or factors purely within the foot segment such as metatarsus adductus, a long hallux, flatfoot deformity, and PASA or distal articular set angle deviations that are harbingers for recurrence (Figs. 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7, and 12.8).

The exam of the patient considering reoperation for recurrent hallux valgus mirrors the exam of an initial surgery patient with the addition of heightened thoroughness and inspection as to whether anything has changed or developed since the initial surgery. Within the PMH for example, has the patient become a diabetic or developed rheumatoid arthritis since the initial surgery? Of primary and utmost importance is the elicitation by the clinician of what exactly is the patient's chief complaint. This should be obtained now, at the beginning of the overall exam, and then repeated at the end for comparison and confirmation by the clinician that they are focused squarely on resolving the issue at hand and physical limitation from the patient's perspective and not myopically treating the X-rays solely or their own subjective and conditioned tendencies with hallux valgus surgery. The margin of error for a successful and pleasing result for the patient is much slimmer than an initial surgery. Is the chief complaint recurrence of the prominence of the first metatarsal head? Pressure and pain on the medial aspect of the second toe due to persistent hallux abductus? Is there metatarsal-sesamoid pain? Is hallux limitus or rigidus the primary complaint?

A full standing exam follows with careful evaluation for any torsional or suprastructural postural forces that may be impacting the foot. Does the patient have a valgus knee that may increase pronatory forces on the foot segment or have they had a proximal joint replacement from the ankle up that may affect favorably or negatively their mobility and functional demand? The standing foot-specific exam must identify the presence or absence of hindfoot and midfoot forces and dynamics that may have been undertreated or unrecognized with the initial surgery. Does the patient have a hindfoot valgus or adult-acquired flatfoot? Is there bowstringing of the extensor hallucis tendon? Is there significant flexor substitution which may contribute to deforming pronatory and flexor forces? Is there metatarsus adductus present that contributes to lateralizing compensatory musculotendinous forces? The seated exam may begin distally at the foot segment and specifically the hallux. Is the hallux abnormally long relative to the second toe? This has been implicated as a causative factor in recurrent hallux valgus due to shoe pressure medially and may increase the vector forces of EHL and FHL on the first mtp joint in a lateral direction. Progressing proximally is evaluation of the first mtp joint and not only the quantity of range of motion but also the quality. Frequently the quantity is emphasized over the quality when in reality a lower yet painless total range of motion may be more tolerable by a patient versus larger yet painful excur-

Fig. 12.1 (a) Case courtesy of Margo Jimenez preoperative X-ray of HAV deformity. (b) Five days post-op with good reduction of the intermetatarsal angle, the metatarsal head well aligned on top of the sesamoids and a congruous mtp joint. (c) At 6 weeks post-op, the beginning of recurrence is noted by opening of the IM angle and early lateral drift of the hallux. (d) At 3 months postoperatively the patient has a definitive prompt recurrence of the hallux abducto valgus deformity



sions of the joint. Is there metatarsal-sesamoid pain along the medial plantar joint line signifying osteoarthritic changes as a part of the chief complaint? An overall assessment of the mobility of the first ray and reducibility of the deformity is critical here and determines the role of the first tarsometatarsal joint in later procedural correction. Was underlying hypermobility missed during the initial surgery? The reducibility or lack thereof of the deformity assists in determining

if the residual effect of soft tissue deforming forces is primary or is it more the latent structural deformity of persistent metatarsus primus varus.

The X-rays must be studied thoroughly and correlated with the physical exam with an eye now toward procedural selection. It is an error to study the X-rays too early in the exam prior to a complete overview of the patient and the determination exactly of what is their chief complaint.



Fig. 12.2 (a–c) In this adolescent hallux valgus case, in spite of excellent initial alignment via a base wedge osteotomy, 1 year later there is a clear recurrence as well. This may be due to lack of recognition of

deforming forces such as an overlying flatfoot and faulty hindfoot mechanics or an untreated equinus deformity

Fig. 12.3 (a, b) It is well recognized and recommendable in a modern approach to adolescent hallux valgus to include a distal articular set realignment procedure in addition to a proximal osteotomy of choice to discourage late recurrence of the deformity



A global view of the state of the first mtp joint is critical. Is the joint congruous, deviated, or subluxed? As the base of the phalanx deviates, do the sesamoids deviate as well? Are they grossly subluxed signifying resultant or recurrent soft tissue forces that must be neutralized? Again, is the proximal phalanx relatively longer than normal, and was there a previous phalangeal osteotomy performed that may have left an

osseous deformity within the phalanx? Are there clear degenerative or erosive changes? Has the metatarsal head been excessively staked which may factor into the practicality of revisional osseous procedures. A rudimentary assessment of any articular set deviation of the metatarsal head cartilage is important with recognition that this must later be substantiated via intraoperative inspection. Next the metatarsal

segment is studied. In the case of a previously performed metatarsal osteotomy, is there an identifiable apex of the recurrent deformity? Is there retained hardware that will need to be retrieved thereby affecting the consideration of revisional first metatarsal osteotomies? It is always wise to obtain either an MRI or a CT scan of the first mtp joint as part of the revisional surgery planning to ascertain the state of the cartilage of the metatarsal phalangeal joint as well as the metatarsal-sesamoid joint.



Fig. 12.4 (a, b) In this minimal incision surgical approach to hallux valgus surgery, a percutaneous Akin osteotomy was performed with a medial eminence exostectomy of the first metatarsal. Four years and 3 months later, there is tremendous recurrence and in fact worsening from the preoperative condition due to the osseous angular deformity created in the proximal phalanx which has affected the vectors of pull of the extrinsic muscles and the weakening of the medial capsule

Procedural planning and procedural selection are best approached via an inventory checklist method that culls any findings from the physical and radiographic exam into a workable and viable suggested surgical approach that will effectively resolve the patient's chief complaint. The inventory list of pertinent clinical and radiographic findings is now collated and assessed directly against a revisitation of the patient's explicit chief complaint. Only now may procedural selection begin. The goal of revisional surgery in a general sense is similar to initial hallux valgus surgery, that is, a well-aligned first ray with reduction of metatarsus primus varus, a congruous first mtp joint, the metatarsal head displaced back directly over the sesamoids, and an aesthetically pleasing and functional alignment of the great toe in relation to the lesser toes. The surgeon must also play a social worker role during procedural selection to the extent that although some patients may be eager and desirous of complying completely with postoperative requirements, they may be situationally noncompliant in the sense that their living and daily arrangements and responsibilities simply do not allow them to comply with certain postoperative instructions.

The overriding goal of the procedural selection phase of the revisional surgical treatment is to err on the side of being aggressive and definitive. A one-stage lasting correction and an end to the frequently frustrating saga are the goal for the surgeon and the patient alike. A simple starting point is the determination of whether the first mtp joint can be saved or not. In the spirit of definitive treatment, if it cannot, a fusion may be considered immediately, and it is clearly understood that the first mtp fusion reliably corrects the intermetatarsal angle as well. If the first mtp joint can be saved, a definitive structural correction of the first ray deviation, intermetatarsal angle recurrence, and unrecognized hypermobility via the



Fig. 12.5 (a) Recurrence of the intermetatarsal angle may come from with performance of a distal osteotomy and perhaps inadequate release of soft tissue contractures or (b) and (c) with diaphyseal osteotomies

and phalangeal and proximal osteotomies that have not accounted sufficiently for stabilization of the first ray segment or considerations of hypermobility of the first ray and first TMT joint

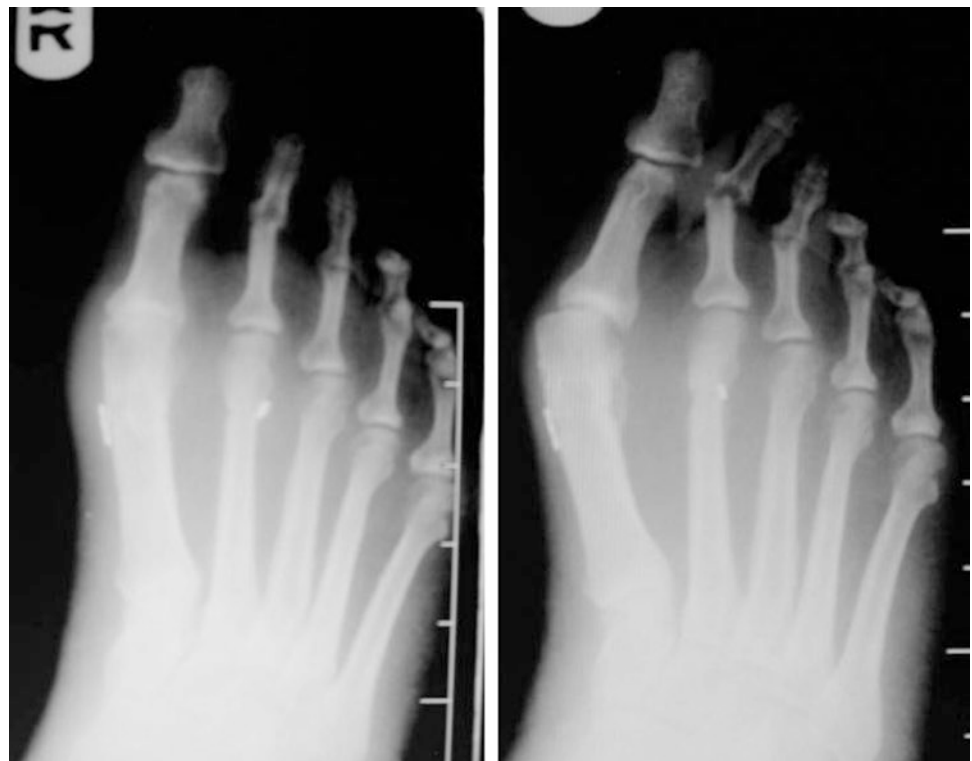


Fig. 12.6 The performance of a distal metatarsal osteotomy and the unappreciated underlying deformity of metatarsus adductus have led predictably here to a recurrent deformity



Fig. 12.7 Bilateral recurrent hallux valgus deformity secondary to poor surgical execution where scarf diaphyseal osteotomies were performed but never translated laterally and therefore never reducing the intermetatarsal angle

Fig. 12.8 Recurrent deformity due to the failure of the internal fixation choice, in this case an endobutton and suture construct, whose use has provoked a stress fracture in the neck of the second metatarsal and reopening of the intermetatarsal angle



Lapidus fusion may be considered. An intermediary option between a fusion at the mtp joint or TMT joint is the performance of a first metatarsal osteotomy and especially if none was performed previously or a proximally based one if a distal one was performed previously. Lastly, deformities of the

midfoot or hindfoot and even recessions of the gastrocnemius should be corrected when deemed influential in the cause of the recurrence. Although it may be attractive to go straight to the Lapidus as the treatment of choice for all recurrent cases, the author cautions that the principle of $N = 1$ dictates that

Fig. 12.9 First mtp fusion for non-salvageable first mtp joints is a definitive and reliable method to resolve permanently the deformity of recurrent hallux valgus. Note the reduction in the IM angle via the fusion and neutralization of the reverse buckling forces on the first ray. This fusion was performed with staple, K-wire, and absorbable pin fixation, and, as is frequently the case in revisional bunion surgery, other forefoot procedures were required as well. Multiple Weil osteotomies were performed on the second, third, and fourth rays to harmonize and decompress the parabola



Fig. 12.10 This case of bilateral recurrent hallux valgus was resolved with first mtp fusions with plate and screws on one foot and crossed multiple K-wires on the other

factors such as surgeon skill, surgeon experience, technical execution, and patient desires and expectations allow for other creative and effective ways to resolve the recurrent hallux valgus dilemma for patients. The remainder of the chapter will illustrate all these options via case presentations and in several specific categories.

The first category is the non-salvageable first mtp joint addressed via first mtp joint fusion (Figs. 12.9, 12.10, and 12.11). The second is the salvageable first mtp joint addressed via a Lapidus fusion (Figs. 12.12, 12.13, and 12.14). The third is the use of basal osteotomies, either opening or closing wedge types for effective recurrent intermetatarsal angle correction, and occasionally a distal osteotomy (Figs. 12.15,

12.16, 12.17, 12.18, 12.19, 12.20, 12.21, and 12.22). Fourth is the manipulations of the scarf or Z-type diaphyseal osteotomy that allow more case-specific corrections of recurrent hallux valgus to be entertained (Figs. 12.23, 12.24, 12.25, 12.26, and 12.27). The fifth category is illustration of examples of cases where a pivotal portion of the revisional correction was the correction of a concomitant midfoot or hindfoot deformity or unrecognized structural issue (Figs. 12.28 and 12.29). Lastly, the sixth and final category embraces the concept of $N=1$ and demonstrates cases in which careful analysis of all elements and variables in the outcome formula described at the outset of this chapter has allowed for very patient-specific procedural selection and combinations of traditional and less traditional

Fig. 12.11 (a, b) Case courtesy of Craig Camasta. Severe subluxation and recurrent hallux abducto valgus after a failed basilar procedure that was effectively corrected with a crossed screw fixation of the first mtp. (c, d) Preop and post-op clinical photos of the patient



approaches to still solve their chief complaint (Figs. 12.30, 12.31, 12.32, 12.33, 12.34, and 12.35).

In summary, the authors find it interesting that patients with recurrent hallux abductus with satisfactory reduction of the IM angle are still fairly satisfied. To a lesser extent, patients are seen as well with recurrent IM malalignment who have no pain. It is possible they have had some compromise of the medial dorsal cutaneous nerve or redundant scar tissue in the medial capsule, but sometimes they do not have pain. In those cases, our preference is not to intervene. In practices that see a fair amount of second opinions, we are

not likely to attempt heroics with a second/third/fourth surgery if there is not significant pain just to make a radiograph look better.

Although there has been for year the thought of the Akin osteotomy as a “cheater Akin,” we find it very valuable as an adjunct. It serves to realign the center of rotation of angulation (CORA) of the great toe joint and realign the pull of the EHL and FHL tendons to discourage abduction.

PASA and articular set deviations also have an understated difficulty in both rotational and translational osteotomy work. When this is not corrected, testing range of

Fig. 12.12 (a, b) Case courtesy of David Granger. Recurrent hallux valgus deformity by attempted distal osteotomy. First ray hypermobility was unrecognized in the initial surgery and corrected by a Lapidus fusion incorporating intermetatarsal base fixation as well

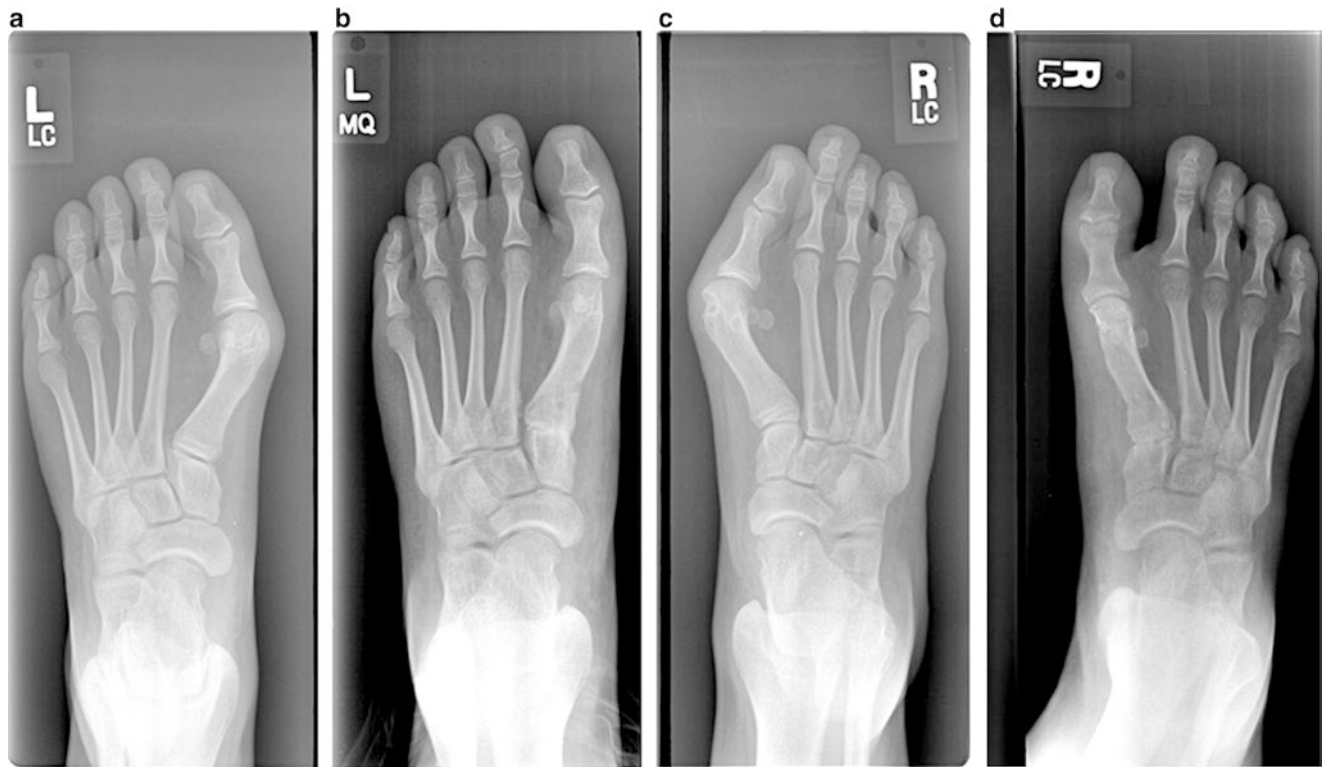


Fig. 12.13 (a) Juvenile hallux valgus surgery via poor surgical selection of a distal osteotomy and unrecognized first ray hypermobility of the first tmt joint. (b) Correction by revisional surgery and a Lapidus fusion with absorbable screw fixation. (c, d) The contralateral foot of

the same patient with the same presentation and revisional correction via Lapidus fusion with absorbable fixation and distal Reverdin osteotomy



Fig. 12.14 (a) Case courtesy of Michael McGlamry. Recurrent hallux valgus with untreated first ray hypermobility and use of a Silastic hemi-implant that cannot provide any structural alignment to the first mtp joint. (b) Intraoperative view of failed Silastic hemi-implant. (c) Interpositional bone block Lapidus fusion to gain length to the first ray

and stabilize the medial column. (d) Interfragmentary and plate fixation of the first tmt joint. (e) Radiographic view of consolidation bone block Lapidus fusion with removal of Silastic implant and conversion to a Keller resectional arthroplasty of the first mtp joint



Fig. 12.15 (a–c) Case courtesy of William Fishco. Prompt recurrence of an intermetatarsal angle after distal osteotomy where relocation of the metatarsal head over the sesamoids was not achieved and inadequate soft tissue rebalancing.

(d) Revisional surgery via retrieval of hardware, complete interspace release, and conversion to a proximal base wedge osteotomy

Fig. 12.16 (a, b) Case courtesy of Annette Filiatrault. Recurrent hallux valgus after distal osteotomy revised via a closing base wedge osteotomy where clinically it was not deemed that first ray insufficiency was clinically relevant

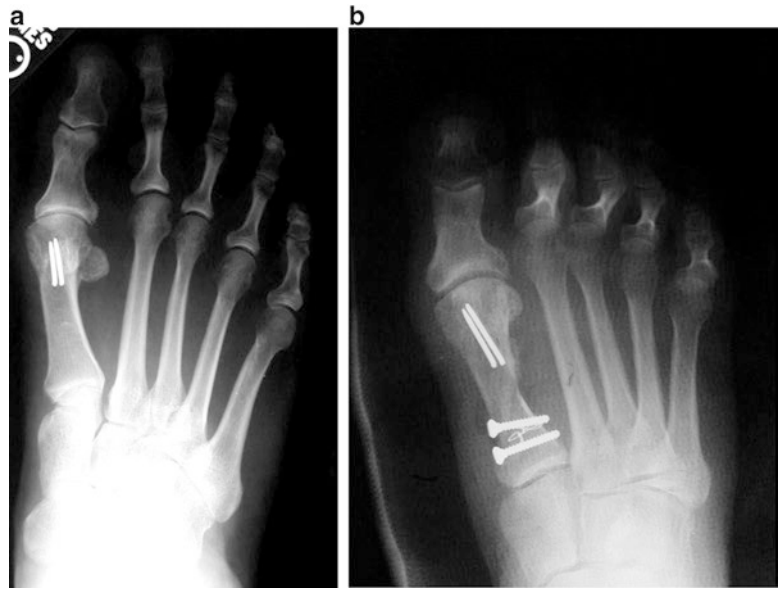


Fig. 12.17 (a, b) Recurrent hallux valgus from a previous distal metatarsal osteotomy. Although a first mtp joint fusion would have been a reasonable choice here, this case was addressed via resectional arthroplasty of the first mtp joint and closing base wedge osteotomy

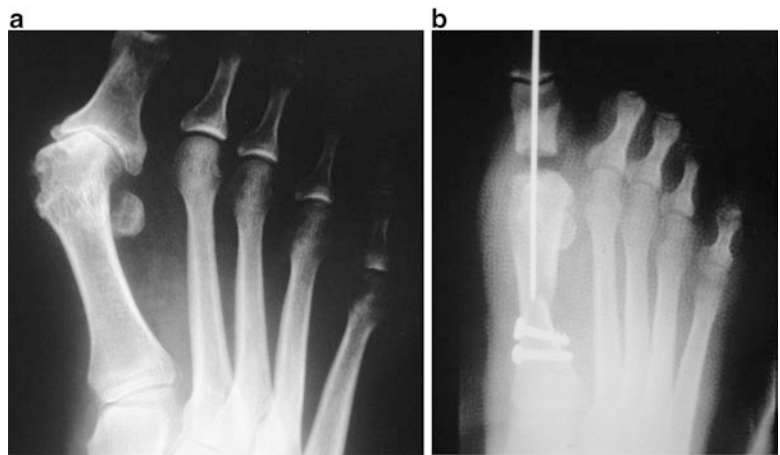


Fig. 12.18 An example of an opening wedge plate for basilar osteotomies that can be particularly helpful in revisional surgery and specifically in the case of a recurrent IM angle or previous first metatarsal osteotomy that has resulted in a short first ray

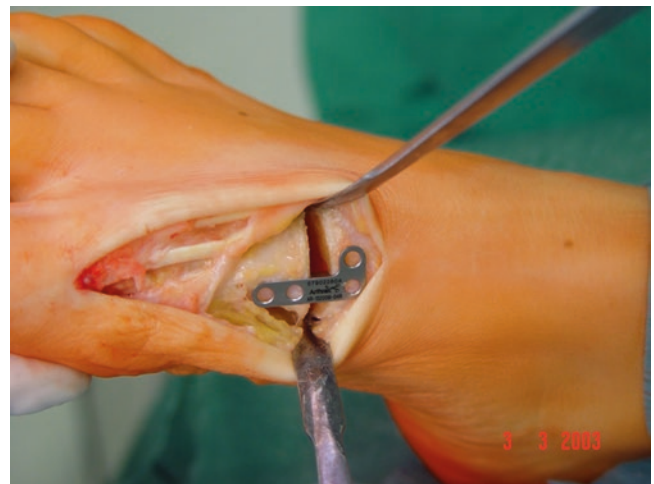


Fig. 12.19 (a, b) Case courtesy of Brad Castellano. Revisional surgery after a failed distal first metatarsal osteotomy via an opening wedge base osteotomy that allows for preservation of first metatarsal length and closure of the IM angle. Notice in this case ancillary procedures were required as well in the form of partial metatarsal head resections of rays 2 and 3

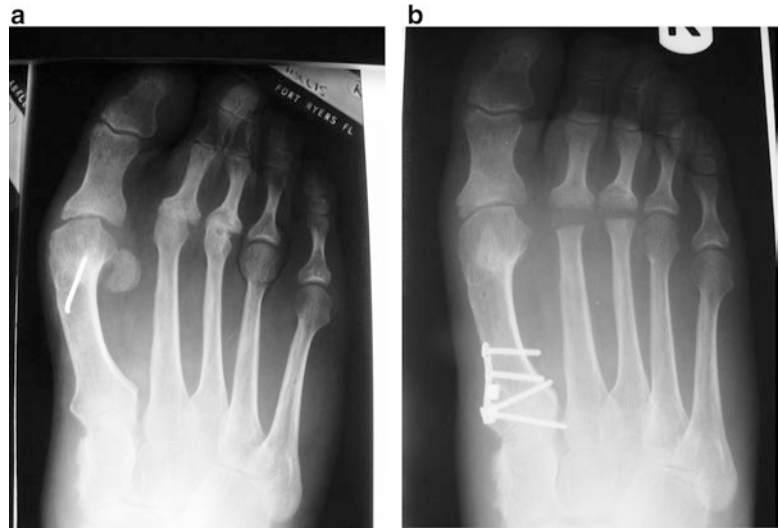


Fig. 12.20 (a, b) Case courtesy of David Granger. Recurrent hallux valgus after a distal osteotomy that left an incongruous first mtp joint and a persistent IM angle. Correction via an opening wedge proximal osteotomy that has clearly regained metatarsal length while closing the IM angle. Decompressive osteotomies of the second and third were also required. This case may have benefited from a phalangeal osteotomy as well for more rectus alignment of the hallux

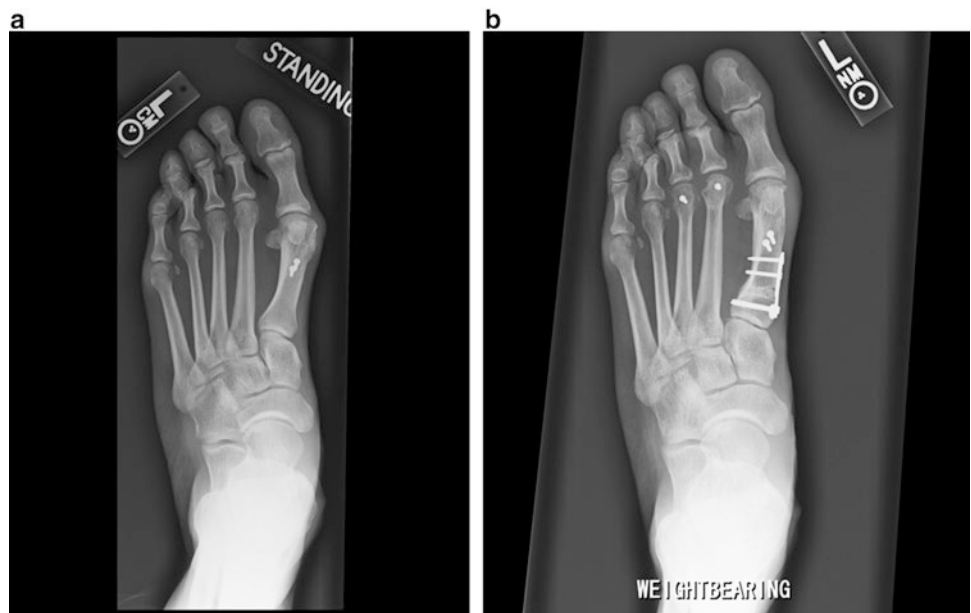


Fig. 12.21 (a, b) Case courtesy of David Granger. Recurrent deformity after a distal first metatarsal osteotomy revised via a proximal opening wedge osteotomy and shortening osteotomy of the second ray

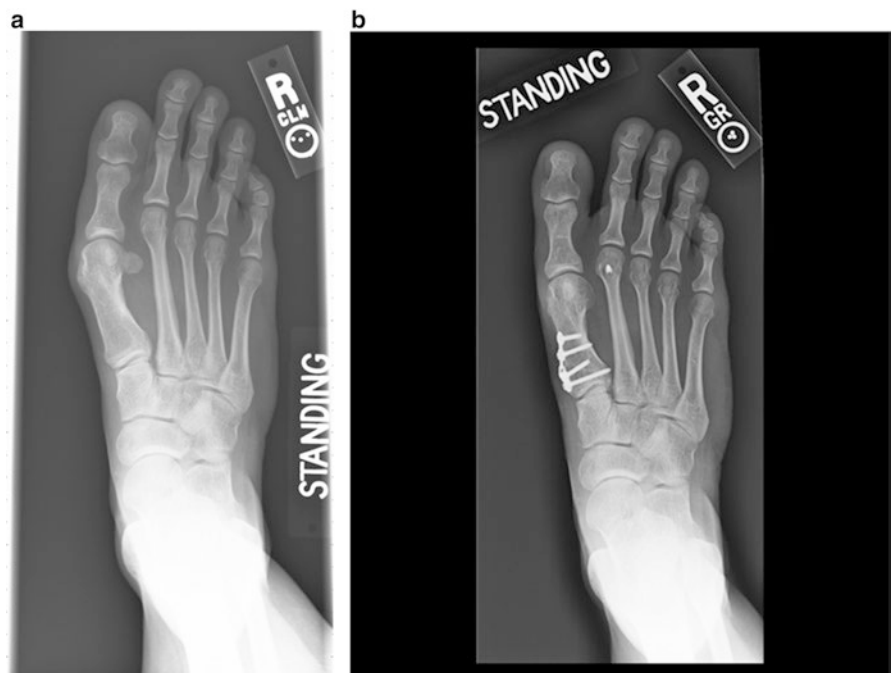


Fig. 12.22 (a, b) Case courtesy of Craig Camasta. Recurrent deformity after a proximal osteotomy. Inadequate soft tissue release was performed initially, and there was sufficient flexibility of the intermetatarsal angle to allow revision via a more complete soft tissue release and distal osteotomy. This is a much less common option but demonstrates the importance of continued intraoperative assessment and evaluation of the reducibility of the deformity after the soft tissue release



Fig. 12.23 (a, b) Recurrent hallux valgus after simple exostectomy and no attempt to reduce the IM angle. A full-length scarf osteotomy with absorbable fixation was utilized and also swiveled proximally to allow for distal articular set correction of the PASA deformity. The scarf diaphyseal cut allows for translation laterally of the first ray and realignment over the intrinsic musculature of the medial column



Fig. 12.24 The scarf cut may be manipulated to allow for lengthening of the first ray as well

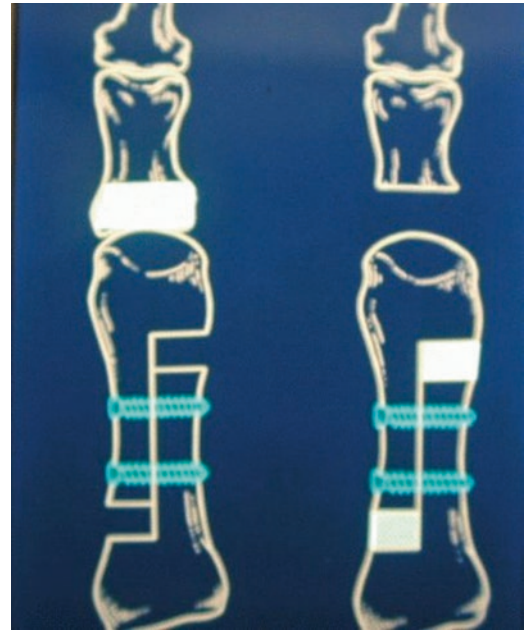


Fig. 12.25 (a, b) By removing a section of bone from the mid-diaphyseal region, recurrent IM angle may be reduced while simultaneously lengthening the first ray. Here the residual osseous deformity in the proximal phalanx from previous osteotomy and the compressive effect of lengthening of the first ray are addressed via Keller resectional arthroplasty

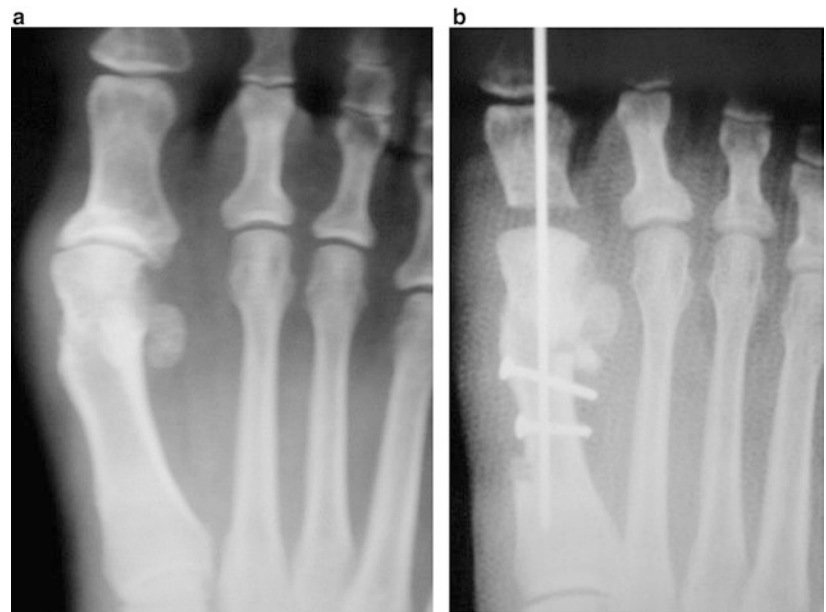


Fig. 12.26 (a, b) In a similar fashion to case 25, here a midshaft manipulation of the scarf osteotomy is used to reduce the IM angle and plantarflex the first ray. No Keller resectional arthroplasty was required



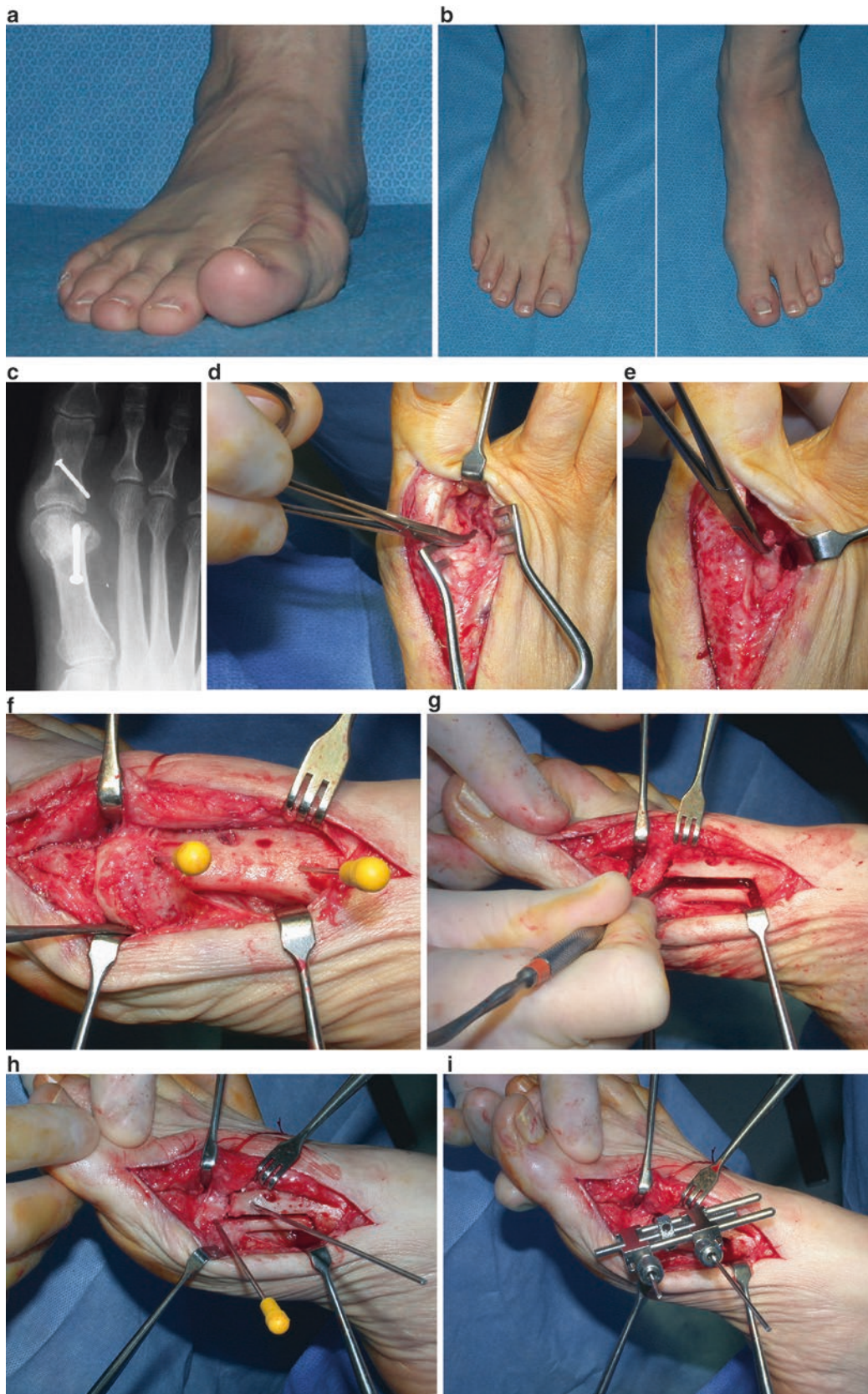


Fig. 12.27 (a, b) Case courtesy of John Ruch. Clinical photos of recurrent hallux valgus and residual IM angle increase in spite of previous surgery. (c) Residual IM increase secondary to swiveling of the capital

osteotomy. (d, e) The first step in revising this case was a complete identification and release of the abductor tendon. (f) Planning with axis guides for a midshaft scarf osteotomy. (g) The scarf osteotomy is cut



Fig. 12.27 (continued) and initial manipulation and distraction begun. (**h, i**) The pins are placed for a mini distractor to assist in manipulations of the scarf osteotomy to allow for reduction of the residual IM angle as well as lengthening of the first ray. (**j**) The osteotomy is clamped and fixated with standard AO technique. (**k, l**) Careful measurements are taken determining the amount of interpositional bone graft required to

fill the gaps created by the lengthening. (**m, n**) Bone graft in place both proximally and distally on AP and lateral views. (**o, p**) Preoperative X-rays with comparison to postoperative X-rays after consolidation of the bone graft. (**q–s**) Multiple clinical pictures at the 7 month mark postoperatively

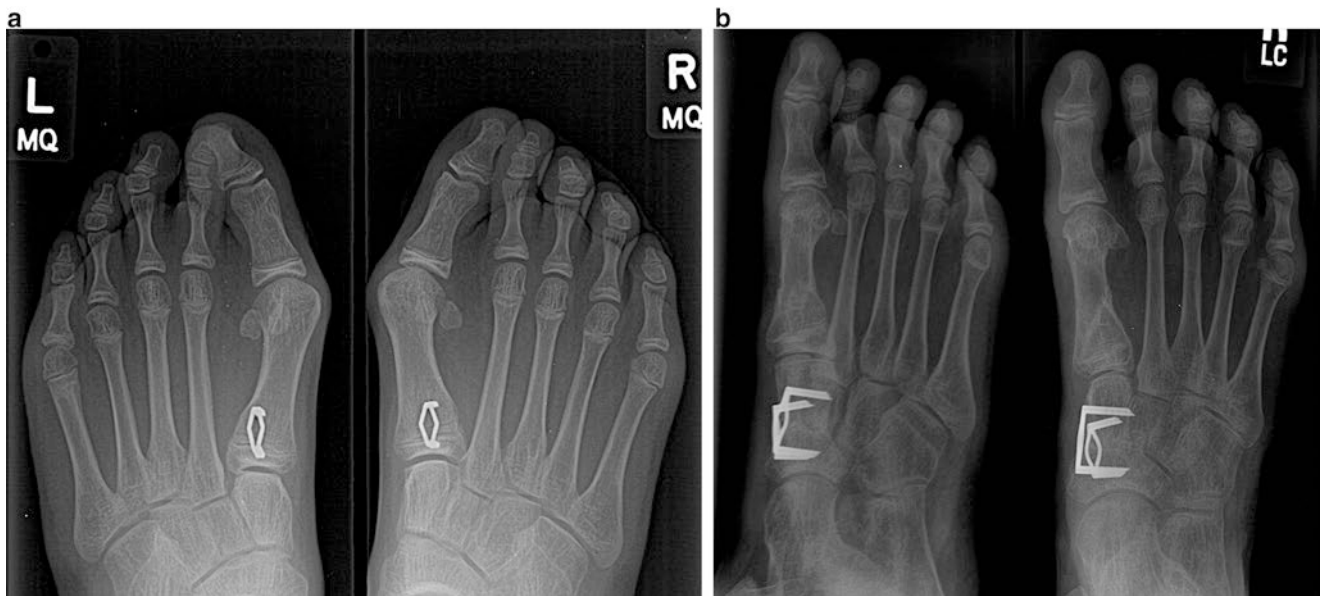


Fig. 12.28 (a) Failed epiphysiodesis in a juvenile patient with the resultant residual/recurrent hallux valgus deformity. (b) Complete revision of the failed case with attention to an unstable midfoot as a primary

deforming force that was not addressed during the initial surgery. A navicular cuneiform fusion was performed with a closing base wedge osteotomy and distal Reverdin capital osteotomy

motion of the joint can feel similar to a soft tissue limitation, and yet an appropriate radiograph will reveal the deformity is osseous. This is one of the preferences for the scarf osteotomy by one author as PASA corrections and swiveling are much easier than with chevron-type cuts. The thoroughness of the lateral soft tissue release including the lateral head of flexor hallucis brevis is very important, but PASA must be corrected simultaneously. Fibular sesamoidectomy is considered more readily in revisional surgery as well and allows the surgeon to more easily gauge the digital

correction of the hallux abductus when performing osteotomy work. Lastly, the use of fluoroscopy is emphasized as critical during revisional surgery and can be misleading. It is not unusual for the foot to be supinated during fluoroscopy shots and be misleading as to the actual correction of the IM angle.

Recurrent hallux valgus deformities require, both in their evaluation and considerations for correction via revisional surgery, a sensible, practical, and empathic mixture of prudence, surgical skill and experience, and attention to detail.

Fig. 12.29 (a) Case courtesy of Alan Catanzariti. Recurrent hallux valgus with attempt at Lapidus fusion and proximal endobutton technique that was insufficient to control the deforming forces of the hindfoot. (b–d) Revisional Lapidus fusion with fixation between the bases of the metatarsals and correction of the unstable hindfoot pronatory forces via medial displacement calcaneal osteotomy



Fig. 12.30 (a, b) In the case, the patient's specific complaint was pressure between the first and second toe, and she had learned to live with the resultant recurrent prominence of the bunion. By focusing squarely on the patient's chief complaint, this case was satisfactorily resolved by a simple Akin osteotomy fixed with absorbable pins. The b photo is 3 years postoperative. In this case the forefoot was narrowed sufficiently by the performance of a fifth metatarsal osteotomy for tailor bunion correction and was accepting of her residual prominence of the first metatarsal head, and therefore it was not addressed





Fig. 12.31 (a–c) Case courtesy of Molly Judge. (a) Recurrent hallux valgus after base wedge osteotomy. Note the flexor power on the adjacent toes. (b) Radiograph of excellent IM angle correction although the patient still has (c) substantial hallux abductus. (d–f) The performance of an Akin osteotomy and the clinical photo 2 years later.

In this case specific attention was paid to the patient’s chief complaint of the deviation of the great toe due in part to its unnaturally length. This also allowed for the avoidance of a first metatarsal osteotomy on a well-aligned and reduced IM angle and a faster rehab and resolution of the real concern

Fig. 12.32 (a, b) This recurrent deformity was corrected with a shortening scarf osteotomy and a Regnaud decompressive proximal phalangeal osteotomy. This patient was not interested in a first mtp joint fusion which also would have been a viable option

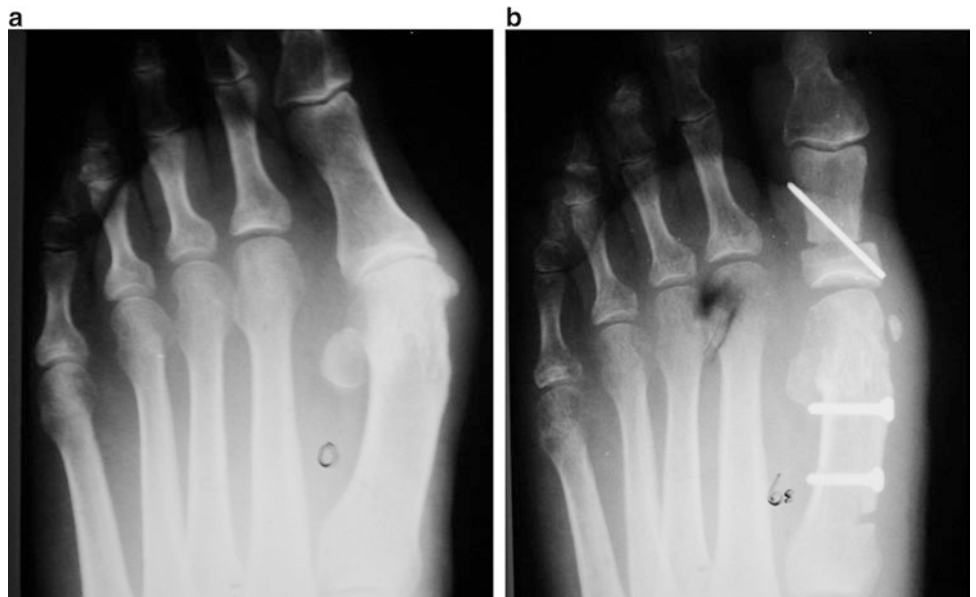




Fig. 12.33 (a) Recurrent hallux valgus deformity with severe staking of the metatarsal heads. There is little bone to work with essentially eliminating the possibility of a distal metatarsal osteotomy. (b, c) This patient was not a candidate for any non-weightbearing procedures nor a first mtp fusion and had low functional demand. She was a high-BMI

individual. Her primary complaint was irritation between the first and second toes from the severe hallux abductus. An effective and lasting correction, c, which is 3 years post-op, was achieved via proximal endobutton repositional correction combined with an Akin and a second metatarsal decompressive osteotomy



Fig. 12.34 (a–c) Failure and recurrence of the intermetatarsal angle after a double row suture and endobutton repair where the suture broke. The patient was highly accepting of the revisional correction via scarf osteotomy as no osteotomy had been performed on the first ray

prior as well as the original surgeon did the revisional surgery as well. Strong patient-doctor communication and confidence can have a profound effect on procedural selection

Fig. 12.35 (a, b) This patient had a recurrence of her hallux valgus deformity after an attempt at distal McBride and opening medial wedge osteotomy of the medial cuneiform. Similar to the case 34, this patient was highly amenable to reoperation which included a scarf osteotomy of the first ray, proximal phalangeal osteotomy, and decompressive Weil osteotomy of the second metatarsal. Again, additional procedures within the forefoot are frequently required in revisional hallux valgus surgery. In this case the patient was unhappy with the previous surgeon and therefore more agreeable to the additionally required procedures



References

1. Judge M. Complications in hallux abducto valgus surgery (excluding hallux varus). In: McGlamry's comprehensive textbook of foot and ankle surgery. 4th ed. Wolters Kluwer/Lippincott Williams & Wilkins; 2013.
2. Lyons MC, et al. Recurrent hallux valgus: treatment considerations. The Podiatry Institute; 2009. Chapter 26