```
nth_tl_lem0  THM

⊢  ∀y:ℕ, as:T*. tl(nth_tl(y;as)) = nth_tl(y+1;as)
| by (Analyze 0) THEN (Analyze 0) THEN (NatInd 2)
|
|\
| .....basecase .....
| 1. T : Type
| ⊢  ∀as:T*. tl(nth_tl(0;as)) = nth_tl(0+1;as)
|   by RecUnfold `nth_tl` 0 THEN Reduce 0
|
.\
. .....upcase .....
. 1. T : Type
. 2. y : ℤ
. 3. 0<y
. 4. ∀as:T*. tl(nth_tl(y-1;as)) = nth_tl(y-1+1;as)
. ⊢  ∀as:T*. tl(nth_tl(y;as)) = nth_tl(y+1;as)
. | by RecCaseSplit `nth_tl`
. |
. 5. 0<y
. 6. as : T*
. ⊢  tl(nth_tl(y-1;tl(as))) = nth_tl(y+1;as)
. | by (InstHyp [tl(as)] 4)
. |    THEN
. |    (RWH (AddrC [3] (RecUnfoldC `nth_tl`)) 0)
. |    THEN
. |    SplitOnConclITE
. |
. .....falsecase .....
. 7. tl(nth_tl(y-1;tl(as))) = nth_tl(y-1+1;tl(as))
. 8. 0<y+1
. ⊢  tl(nth_tl(y-1;tl(as))) = nth_tl(y+1-1;tl(as))
.   by RWH (HypC -2) 0
END
```