```
select_nth_tl  THM

⊢  ∀as:T List, n:{0...||as||}, i:ℕ(||as||-n).
|  nth_tl(n;as)[i] = as[(i+n)]
| by (CDToVarThen ‘as’ ListInd) THEN (Reduce 0)
|
|\
| 1. T : Type
| 2. T List
| ⊢  ∀n:{0...0}, i:ℕ(0-n). nth_tl(n;nil)[i] = nil[(i+n)]  by Auto
|
.\
. 1. T : Type
. 2. T List
. 3. u : T
. 4. v : T List
. 5. ∀n:{0...||v||}, i:ℕ(||v||-n). nth_tl(n;v)[i] = v[(i+n)]
. ⊢  ∀n:{0...||v||+1}, i:ℕ(||v||+1-n). nth_tl(n;u.v)[i] = (u.v)[(i+n)]
. | by RepD THEN (RecCaseSplit ‘nth_tl‘)
. |
. |\
. | .....truecase .....
. | 6. n : {0...||v||+1}
. | 7. i : ℕ(||v||+1-n)
. | 8. n≤0
. | ⊢  (u.v)[i] = (u.v)[(i+n)]  by Assert (n = 0)
. | |
. | 9. n = 0
. | ⊢  (u.v)[i] = (u.v)[(i+n)]  by RWO "9" 0
. |
. .\
. . 6. n : {0...||v||+1}
. . 7. i : ℕ(||v||+1-n)
. . 8. 0<n
. . ⊢  nth_tl(n-1;v)[i] = (u.v)[(i+n)]  by RWO "5" 0
. . |
. . ⊢  v[(i+n-1)] = (u.v)[(i+n)]
. .   by RWO
. .      Thm* ∀a:T, as:T List, i:ℤ.
. .           0<i ⇒ i≤||as|| ⇒ (a.as)[i] = as[(i-1)]
. .      {select_cons_tl}
. .      0
END
```