```
and_via_all_intseg_notnull  THM

⊢  ∀a,b:ℤ, P:({a..b⁻}→Prop).
|  a<b
|  ⇒
|  (∀c:ℤ.
|   b = c+1 ⇒ ((∀i:{a..b⁻}. P(i)) ⟺ (∀i:{a..c⁻}. P(i)) & P(c)))
| by UnivCD
|
1. a : ℤ
2. b : ℤ
3. P : {a..b⁻}→Prop
4. a<b
5. c : ℤ
6. b = c+1
⊢  (∀i:{a..b⁻}. P(i)) ⟺ (∀i:{a..c⁻}. P(i)) & P(c)  by Auto
|
|\
| 7. ∀i:{a..b⁻}. P(i)
| 8. i : {a..c⁻}
| ⊢  P(i)  by BackThru: Hyp:-2
|
|\
| 7. ∀i:{a..b⁻}. P(i)
| ⊢  P(c)  by BackThru: Hyp:-1
|
.\
. 7. ∀i:{a..c⁻}. P(i)
. 8. P(c)
. 9. i : {a..b⁻}
. ⊢  P(i)  by Decide: i = c ∈ ℤ
. |
. |\
. | 10. i = c
. | ⊢  P(i)  by Rewrite by i = c ∈ {a..b⁻}
. |
. .\
. . 10. ¬i = c
. . ⊢  P(i)  by BackThru: ∀i:{a..c⁻}. P(i)
END
```