```
sum_via_intseg_split_mid  THM

⊢  ∀a,c,b:ℤ, e:({a..b⁻}→ℤ).
|  a≤c
|  ⇒
|  c≤b
|  ⇒
|  (Σ i:{a..b⁻}. e(i)) = (Σ i:{a..c⁻}. e(i))+(Σ i:{c..b⁻}. e(i))
| by Inst:
|    Thm*  ∀f:(A→A→A), u:A.
|          is_ident(A; f; u)
|          ⇒
|          is_assoc_sep(A; f)
|          ⇒
|          (∀a,c,b:ℤ, e:({a..b⁻}→A).
|           a≤c
|           ⇒
|           c≤b
|           ⇒
|           (Iter(f;u) i:{a..b⁻}. e(i))
|           =
|           f((Iter(f;u) i:{a..c⁻}. e(i)),Iter(f;u) i:{c..b⁻}. e(i)))
|    {iter_via_intseg_split_mid}
|    Using:[ℤ | λx,y. x+y | 0]
|    THEN
|    OnAllClauses Reduce
|
|\
| .....antecedent .....
| ⊢  is_ident(ℤ; (λx,y. x+y); 0)  by Analyze THEN Reduce Concl
| |
| 1. x : ℤ
| ⊢  0+x = x & x+0 = x  by Auto
|
.\
. .....antecedent .....
. ⊢  is_assoc_sep(ℤ; (λx,y. x+y))  by Analyze THEN Reduce Concl
. |
. 1. x : ℤ
. ⊢  ∀y@0,y:ℤ. x+(y@0+y) = (x+y@0)+y  by Auto
END
```